THE UNIVERSITY
OF ILLINOIS
LIBRARY
619.05
AV
v.21
cop.2

VETERINARY MEDICINE
LIBRARY

OAK ST HDSF

AMERICAN VETERINARY REVIEW,

EDITED BY

PROF. A. LIAUTARD,

Foreign Corresponding Secretary of the Central Society of Veterinary Medicine (Paris),
Honorary Fellow of the Royal College of Veterinary Surgeons (England),

AND

PROF. ROSCOE R. BELL,

WITH THE COLLABORATION OF

Prof. W. J. COATES, M.D., D.V.S., of the American Veterinary College.
Prof. O. SCHWARZKOPF, V.M., Flushing, L. I.
Prof. P. J. CADIOT, of the Alfort School, France.
Prof. WM. L. ZUILL, M.D., D.V.S., late of the University of Pennsylvania (Vet. Dept.).
Prof. W. L. WILLIAMS, V. S., Cornell University, Ithaca, N. Y.
J. F. WINCHESTER, D.V.S., Lawrence, Mass.
Prof. S. STEWART, M.D.V.S., Sec'y U.S.V.M.A., Kansas City, Kan.
CLAUDE D. MORRIS, V.S., Pawling, N. Y.
NELSON P. HINKLEY, V.S., United States Veterinary Inspector, Buffalo, N. Y.
GEORGE H. BAILEY, D.V.S., State Veterinarian, Portland, Me.
Prof. W. B. NILES, D.V.M., Ames, Ia.
L. H. HOWARD, D.V.S., Boston, Mass.
W. L. LABAW, D.V.S.. Boston, Mass.
GEO. H. BERNS, D.V.S., Brooklyn, N. Y.
Prof. H. D. HANSON, New York City.
Prof. A. S. HEATH, M.D.V.S., New York City.

And several others.

VOLUME XXI.

NEW YORK:
PUBLISHED BY THE EDITORS,
141 WEST 54th STREET.

PRINTED BY
CLARK & ZUGALLA,
33 TO 43 GOLD STREET,
NEW YORK.

613.05
AV
v.21
cop.2

4/14

ILLUSTRATIONS IN VOLUME XXI.

Cystoma Dermalis, 53.
A New Universal Float, 60.
Luxation of the Femur, 255.
Clasps and Toe-Cracks, 319.
Rectal and Vaginal Irrigator, 334.

Extreme Luxation of the Patellæ in a Foal—
  Fig. I.—Crouching Attitude of Foal due to Displacement of the two Patellæ, 447.
  Fig. II.—External View of Right Stifle, 448.
  Fig. III.—Oblique Lateral View of Right Stifle, 449.
  Fig. IV.—Anterior View of Left Stifle with Femoro-Patellar Capsule Opened, 450.
  Fig. V.—Oblique Lateral View of Left Stifle with Capsule Opened, 451.

Fracture in Utero, 566.
Amputation of the Penis, 711.
A Fire Department Veterinary Hospital, 782.
A Movable Calk Anti-Slipping Shoe, 783.
The Phonendoscope, 837.
Veterinary Surgeon Peas, 858.

377675

TABLE OF CONTENTS, VOLUME XXI.

EDITORIAL.

The Question of Reciprocity among State Examining Boards.......... 1
The Review Has Attained Its Majority.......................... 4
Serum-Therapy of Purpura Hæmorrhagica........................ 5
Notice to Members of the U. S. V. M. A........................ 5
Tuberculine and Malleine.......... 73
Easy Urinary Analysis............. 74
Pricking a l'Americaine............ 75
A Vicious Bill before the New York State Senate.................... 76
Signs of the Times................ 151
Illinois Veterinarians Up in Arms 153
Graduated Veterinarians of New York State.......................... 154
Get Ready for Nashville............ 155
No Fees for State Students at the New York State Veterinary College..... 156
Still Silent...................... 223
American Veterinarians, Be Watchful. 225
The Tuberculin Test in Massachusetts 227
Get Ready for Nashville............ 228
A Woman Veterinarian............ 229
Amputation of the Horse's Tail for Fashion's Sake................ 295
The Revival of the Horse Industry... 297
Are the Appointments of Quacks Infectious?........................ 300
United States Veterinary Medical Association.................... 301
State Boards of Veterinary Examiners. 302
Glanders—Its Contagion—Its Curability—Malleine.................. 369
A Reply? Yes! An Explanation? No!.......................... 373
The Nashville Meeting and the Review.......................... 375
Quack Appointments Already Yielding Fruit........................ 375
Two Excellent Appointments 376
Are Fistulæ of the Withers Infectious? 376
The New York State Veterinary Medical Society.................. 376
Serotherapy of Tetanus............ 439
The Nashville Meeting of the U. S. V. M. A......................... 440
The New York State Meeting........ 441
The Review's Advice Followed.-.... 442
A Library for the New York State Veterinary College............. 443
Section Work in the U. S. V. M. A... 525
Expert Veterinary Testimony Needed. 527
Dr. W. H. Dalrymple............ 527
The Country Slaughter-House as a Factor in the Spread of Disease... 528
Female Veterinarians............. 595
Asininity of the M. D. on Veterinary Topics.......................... 596
Tautological Extravagance......... 598
Higher Education................. 598
A Prophetic Vision Indeed.......... 598
The Tuberculosis Crusade in Honolulu 599
The English Lady Veterinarian...... 599
Editorial Modesty................ 599
Sowing the Wind and Reaping the Whirlwind...................... 665
The Modern Horse Show 667
For the Improvement of Meat Inspection.......................... 669
Professional Courtesy............. 669
A Commendable Example.......... 670
The Future of Veterinary Education in New York State................ 739
The U. S. V. M. A. to Meet in Omaha in 1898....................... 741
Keep Up the Work in Pennsylvania.. 742
An Interesting Discussion........... 807
Medical Education in the Empire State.......................... 809
Dangers of Private Slaughter-Houses. 811
Assembly Bill 555................ 812

ORIGINAL ARTICLES.

Bovine Tuberculosis in its Relation to the Human Family. By George H. Bailey.........................6, 77
Azoturia. By John R. Hart......24, 95
The Board of Health and Tuberculosis. By A. S. Heath..........33, 103
Barium Chloride; Its Use in the Treatment of Colic and Acute Indigestion. By John E. Brown...... 38
Odontomes: Report of Three Cases. By J. F. Pease................. 42
Examination for Soundness. By H. D. Hanson..................... 46
Cannabis Indica—Cannabis Americana. By Charles Williams...... 106
Azoturia, with Strain and Atrophy of the Great Dorsal Muscles in a Mare. By W. L. Williams............. 157

TABLE OF CONTENTS, VOLUME XXI.

Why? By W. L. Rhoads.......... 168
What Prof. Bang's Work Teaches. By Leonard Pearson................ 169
Veterinary Science and Its Relation to the Public Health. By J. F. Kennedy........................ 176
The Future of the Veterinary Profession. By E. L. Volgenau........ 183
Three Consecutive Recoveries from Glanders. By W. L. Williams... 230
Canine Practice, with Notes on Cases. By R. H. Harrison.............. 234
Diseases of the Heart and Blood Vessels. By J. A. Couture.......... 240
The Veterinarian and the Horse-Shoer. By J. P. Adams......... 242
Salicylate of Sodium. By W. C. Hanawalt...................... 249
European Chronicles............... 252
Infectious Abortion of Mares. By W. L. Williams.................... 303
Acute Laminitis. By B. L. Clark... 306
Anæsthesia. By F. Torrance....... 311
Was the Horse Indigenous to America. By W. J. Martin................ 317
Clasps and Toe-Cracks. By A. L.... 319
The Parasitic Ictero Hæmaturia of Sheep. By W. L. Williams...... 377
Tetanus. By Leonard Pearson...... 380
The Tuberculin Test for Tuberculosis in Milch Cows. By David S. White 386
Specific Cures in Certain Diseases. By S. H. Ward.................... 393
Extreme Luxation of the Patellæ in a Foal. By W. L. Williams....... 444
Serotherapy of Tetanus. By I. Nocard........................ 453
Results Attained and Attainable by State Control of Tuberculosis. By John M. Parker..............462, 536
Treatment of Thoroughpin. By Charles Cowie.................. 471
Glanders—Use of Malleine in Doubtful Cases...................... 474
The Goat as a Means of Checking the Spread of Contagious Diseases to Man and Domestic Animals. By A. S. Heath.................... 528
How to Prepare Products for Shipment to the Pathological Laboratory. By James Law.................. 547
Major McCann's Welcome to the U. S. V. M. A....................... 553
On the Use of Barium Chloride. By A. C. Hasslock................. 556
The Veterinarian and the Humanitarian. By W. H. Dalrymple........... 600
Inhalation Pneumonia. By W. L. Williams and P. A. Fish........ 609
Interesting Tuberculin Reactions. By F. S. Schoenleber............... 618
Veterinary Journalism. By W. H. Dalrymple................. 620
Some Remarks on Anti-Hog Cholera Serum. By C. Fisch........... 671
Methods of Meat Inspection. By Leonard Pearson................ 679
Milk Inspection. By James Henderson.......................... 685
A Contribution to the Symptomatology of Rupture of the Diaphragm. By W. A. Heck.................. 696
Report of Two Surgical Cases. By Otto G. Noack................. 699
A Rapid Method of Emptying the Stomach in Case of Poisoning. By J. H. Blattenburg............... 701
Infectious Catarrhal Fever of Horses. By Roscoe R. Bell............. 744
Tuberculosis and Its Relation to the Veterinarian. By C. W. Fisher.. 753
Electricity for Stricture of the Teat. By J. J. Drasky................ 759
European Chronicles. By Prof. Liautard........................ 761
Light as a Bactericide—Phototherapy. By H. deVarigny............... 763
Reflex Paralysis, or Paralysis from Indigestion. By J. G. Parslow..... 769
Remarks on the Nature and Differentiation of the Infectious Swine Diseases in the United States. By Veranus A. Moore............... 813
Cerebro-Spinal Meningitis. By W. J. Martin........................ 829
The Phonendoscope in Medical and Veterinary Practice. By A. Vachetti......................... 837

REPORTS OF CASES.

Obstinate Case of Impaction of Small Intestine. By Robert W. Ellis... 49
Cystoma Dermalis. By L. E. Willyoung......................... 52
Two Interesting Post-Mortem Lesions. By E. L. Volgenau.............. 53
Amputation of the Tongue. By W. J. Martin....................... 54
Canine Convulsions Induced by Eating Plum-Stones. By L. E. Willyoung 55
Parasitic Bronchitis. By Sidney D. Meyers.................... 108

Outbreak of Cerebro-Spinal Meningitis. By E. F. Koehler........ 109
Experiences with Sanmetto in Various Diseases. By W. Chas. Covey... 110
The Vagaries of Influenza in Green Horses. By Francis Abele, Jr..... 186
Moderate Exercise Successful in a Case of Iliac Thrombosis. By Francis Abele, Jr............... 187
Luxation of the Femur. By Wm. V Lusk........................ 254
Lipoma Causing Death. By J. F. Roub......................... 256
Supernumerary Testicles. By H. H. Newcomb...................... 257
Rupture of the Flexor Metatarsi. By Wm. V. Lusk.................. 257
A Fœtal Monstrosity. By R. Kerr.. 258
Infectious Pneumonia in North Carolina. By J. W. Petty........... 321
Hermaphrodism. By J. A. Couture. 321
Polyuria from Turpentine Irritation. By J. W. Petty................ 322
Interesting Recovery from Hydrops Amnii and Ascites. By M. J. Jones 395
Obstruction of Small Intestine of Dog by Block of Wood. By Chester Miller......................... 398
Ruptured Bowel Caused by Cyst. By T. F. Moyle.................. 399
Pyæmic Abscess in Lumbar Region, Causing Peritonitis and Death in a Colt Two Months Old. By T. F. Moyle.......................... 400
Worms in the Appendix of a Puppy. By N. B. Rhodes............... 476
New Treatment for Parturient Apoplexy. By Francis Abele, Jr..... 477
Large Calculus from a Mare Without Ceasing Work. By Wm. Jakeman 478
Grafting Dog Skin on Shetland Pony. By George Cohen.............. 479
Valvular Disease of the Heart in the Horse. By Francis Abele, Jr.... 479
Urethral Calculus. By S. R. Howard 561
Two Cases of Typhoid in the Horse. By C. W. Heitzman............ 561
Rupture of the Liver. By W. J. Martin........................ 562
A Case of Azoturia. By Robert W. Ellis......................... 558
The Spermatic Cord Twisted Around the Colon. By A F. Abbott..... 564
Hernia of the Small Intestine through the Mesentery. By R. C. Jenks.. 565
Fracture in Utero. By H. D. Fenimore......................... 566
Extracts from Clinical Records of the American Veterinary College Hospital. By Chas. E. Clayton. Another Case of Rupture of the Coraco-Radialis—Osteo-Porosis; To Add to the Value of Median Neurectomy; Epileptiform Fits Due to Parasites........................ 623
The Use of Eserine in Parturient Apoplexy. By W. E. McCray....... 626
Punctured Wound in the Breast, with a Peculiar Complication. By Charles S. Atchison.................... 627
Intussusception of Small Intestine of Colt — Operation — Recovery By E. Mayhew Michener.... 702
A Post-Mortem Examination Well Worth the Trouble. By C. Henry Doepel........................ 794
Is It Hog Cholera? By J. A. McCrank......................... 705
Cattle Poisoning. By J. A. McCrank 707
Purpura Treated by Antistreptococcus Serum. By W. G. Hollingworth.. 708
Vesico-Rectal Fistula. By J. D. Sturm 709
Amputation of Penis in Twenty-three-Year-Old Gelding. By James M. Reed......................... 710
A Dental Cyst at the Base of the Ear. By E. C. Walker............... 712
Phlegmonous Erysipelas. By John L. Tyler......................... 773
Bronchocele Successfully Treated in the Dog. By J. B. Hollenback.. 775
General Fatty Degeneration of the Muscular System. By E. L. Volgenau............... 839
Lymphangitis and Hypertrophied Hoof from Calking. By W. L. West 840
Sanmetto in Canine Cystitis. By G. L. Barnaby.................... 841
Removal of the Premaxilla By J. A. McCrank........... 843

EXTRACTS FROM EXCHANGES.

German Review—

A New Fœtal Organ............ 187
Discovery of the Bacillus of Foot-and-Mouth Disease............ 188
Another Germ Supposed to be the Specific Cause of Foot-and-Mouth Disease...................... 189
Contribution to the Treatment of Tetanus by Tetanus Antitoxin.. 267
The Danger Attending the Use of

Meat of Tuberculous Animals. . . 269
Researches Upon the Origin of Human Diphtheria from Poultry. . . . 336
Koch's New Tuberculin. 337
Brain Abscess in the Horse. 338
Hyperæmia of the Spleen in Sheep as a Means of Diagnosis of Forced Fattening of Animals before Slaughter. 338
The Probable Identity of the Bacteria of Aphthous Stomatitis of Human Beings and of Foot-and-Mouth Disease of Cattle. 415
Urticaria in Swine. 415
Hydromatra in a Non-Pregnant Cow 416
Eclampsia in a Bitch. 567
Bronchial Croup in the Ox. 567
The Treatment of Lumbago Gravis of the Horse with Sodium Bicarbonate. 568
A Warning Against Koch's New Tuberculin. 568
Intravenous Injection of Normal Salt Solution in Toxæmias and Extensive Hæmorrhages. 632
Cleft Palate in a Stallion 633
Passage of a Tracheotomy Tube into the Trachea. 633
Lipoma in a Terrier 634
Uræmia in a Dog 634
Value of Neurectomy. 715
Fatal Panophthalmitis in the Horse 715
Tetanus Antitoxin in the Horse . . . 715
Internal Medication of Chronic Nasal Discharge with Iodide of Potash 775
Ulcerated Endocarditis of Biliary Origin in the Horse. 776
Morbus Maculosus in a Dog. 777
Treatment of Chronic Obstipation with Beech-Wood Creosote 843
A New Treatment for Chronic Lameness of the Shoulder. 844
Oleum Cannabis as a Galactifuge. . 844
The Value of Hydrastis Canadensis in Bronchial Catarrh. 845

ENGLISH REVIEW—

Tetanus Treated by Tetanus Antitoxin. 55
Masticatory Paralysis in a Dog 55
Scrotal Hernia in Foals. 112
Fistula of the Œsophagus 113
Enlargement of the Prostate Treated by Castration. 192
"X Rays" in Canine Surgery . . . 192
Hæmatoma of the Ear. 193
Burns Treated by Iodine. 193
An Abnormal Median Nerve. 194
Lead Poisoning. 195
Follicular Mange 338
Uterine Fibrous Tumor 339
Tumor in the Brain of a Dog. 339
Foreign Body in the Stomach. . . . 340
Docking of Horses. 416
Acute Bronchorrhœa 417
Verminous Aneurism of the Posterior Mesenteric and External Iliac, with Rupture of the Latter. 417
Canine and Feline Surgery 417
Hernia in Dogs. 492
Needle in the Œsophagus of a Dog 493
Two Cases of Orchitis in the Dog. . 493
Ovariotomy and Vaginal Tumors. . 494
Interesting Fractures. 634
Tuberculosis in Pigs. 635
Tetanus and Antitetanic Serum. . . . 635
A Hat-Pin in the Œsophagus 636
Lameness Due to Hypertrophy of the Lower End of the Small Metacarpal Bones. 636
Neck of Glass Bottle Lodged in Larynx. 849
Ovarectomy in a Monkey. 850
Multiple Fracture of the Pelvis. . . . 850
Glanders in England. 850
Fractured Rib with Perforation of Thorax in a Cow. 851

FRENCH REVIEW—

Treatment of Gangrenous Swellings by Intra-Muscular Injections of Cresyled Water. 56
Lympho-Sarcoma at the Entrance of the Chest in a Cow. 111
Radical Treatment of Umbilical and Ventral Hernias in Animals 112
Abscess of the Pelvis and Polyneuritis in a Mare. 189
Metrorrhagia in a Heifer. 190
Lupinosis of the Horse Resembling Glanders—Usefulness of Malleine 191
Stomacheal Indigestion in the Horse 273
Œsophageal Obstructions 27
Cryptorchidy. 273
Plantar Neurotomy. 274
Foreign Body in the Pharynx of a Cow 274
Amyotrophy of the Antea and Postea Spinatus (Sweeny) by Contusions of the Subscapular Nerve. 275
Wound, Exfoliation and Transversal Section of the Extensors of the Phalanges of the Right Hind Leg 275
Contribution to the Study of Capped Hock 276
Calculary Cystitis 340
Prevention of the Umbilical Infections of New-Born Animals. 341

Intestinal Perforation in a Mule—Abdominal Abscesses — Splenic Hæmorrhage—Peritonitis 489
Strangulation of the Intestines by the Peduncle of a Lipoma 489
Accidental Laceration of the Œsophagus 490
Picric Acid as a Dressing for Wounds 490
Chronic Amaurosis and Temporary Epistaxis..................... 491
Rupture of the Internal Insertion of the Cap of the Perforatus and Luxation of the Tendon on the External Face of the Hock........ 491
Rupture of the Anterior Vena Cava in a Horse................... 568
Parotid Salivary Calculi.......... 569
Epizootic Cerebro-Spinal Meningitis of Ovines.................... 569
Tracheotomy Tube in the Trachea—Second Operation............. 570
Diaphragmatic Hernia in a Horse.. 570
Exostosis of the Left Side of the Face....................... 570
Periaortic Encephaloid Sarcoma—Arteritis—Ossification of the Aorta —Embolism of the Iliac 778
Chorea of the Diaphragm of a Cow 779
Infectious Hepatitis of Young Pigs 78c
Iodide of Potassium in Strychnia Poisoning.................. 780
Volvulus in a Horse—Post-Mortem Rupture of the Stomach........ 845
Cardial Dilatation with Insufficiency of the Orifices—Rupture of the Posterior Vena Cava.......... 846
The Influence of the Nature of Foreign Body in the Intestinal Obstruction of Dogs.............. 846
Hypertrophy of the Prostate and Perineal Hernia of the Bladder in a Dog..................... 847
Abnormal Retention of the Fœtus in a Cow..................... 847
Purulent Infection following Chronic Endometritis................. 848
Infectious Paraplegia.... 848
Temporary Deafness in a Horse... 849

DUTCH REVIEW—

Vesical Calculus in a She Ass..... 195
Uterine Fistula.................. 195
Treatment of Dog Distemper by the Trichloride of Iodine.......... 196
Palatine Fistulæ in Cattle......... 196

RUSSIAN REVIEW—

Gemellar Gestation in a Mare..... 196
Cribbing in a Five Months Colt... 196
Double Cæcum in a Cow 197
Echinococcus on the Mitral Valve. 197
Tetanus Cured by Subcutaneons Injections of Lughol (?) Solution.. 197

BELGIAN REVIEW—

Extra-Uterine Gestation in Cows.. 270
Tearing of the Sesamoid Ligaments and of those of the Interphalangeal Joints.................... 271
Pelvic Abscess in a Horse........ 344
Prolapsus Uteri and Its Treatment —A New Apparatus........... 345
Pancreatic Diabetes in a Dog...... 346
Some Remarks upon Anæsthesia of Horses..................... 346
Pulmonary Emphysema—Its Treatment....................... 347
Canine Pathology............... 853
Contracture of the Anterior Legs in a Colt...................... 854
Torsion of the Mesentery a Cause of Intestinal Obstruction in a Dog.. 854
Laparo-Gastrotomy and Extraction of a Foreign Body in a Dog..... 855

ITALIAN REVIEW—

Serotheraphy in the Infectious Pleuro-Pneumonia of Horses.... 341
Tetanus Cured by Phenic Acid.... 342
Angioma of the Glans Penis....... 342
Fibroma of the Left Flank of a Horse..................... 342
Fungoid Growths of Enormous Dimensions on Both Spermatic Cords of a Horse.............. 343
Rays in X and Experimental Tuberculosis..................... 343
Successful Œsophagotomy......... 571
Large Rectal Abscess 571
Voluminous Connectiva in a Dog.. 572
Cold Abscesses of the Mastoido-Humeralis.................. 573
Abortion in a Cow—Seven Fœtuses 851
Stenosis of the Prepuce Resulting from Acrobystitis and Shortness of the Penis in a Horse......... 851
Trauma of the Heart in a Cow.... 852
A Queer Treatment for Indigestion in Cattle..................... 852
Sulfuret of Carbone and Bots...... 852

AMERICAN REVIEW—

Intravenous Injection of Artificial Blood Serum for the Relief of Toxæmia and Extensive Hæmorrhages...................... 277
Operation of Arytenectomy Assisted by Electrical Lamp............ 278

Cat with Two Spleens............ 347
Traumatic Pericarditis in a Cow .. 347
Tetanus in a Cat................ 348
Intestinal Hernia through Great Omentum in a Colt............ 348
Subcutaneous Injections of Iodine for Spavin and Ringbone........ 348
Potassium Iodide for Champignon. 716
Spasmodic Contractions with Hypertrophy of the Retractor Muscles of the Penis of a Bull......... 717

ROUMANIAN REVIEW—

Some Researches in Urethane..... 494
Muscular Atrophy and Articular Pains....................... 495

SPANISH REVIEW—

Indigestion and Copræstasis....... 780
Three Clinical Cases............ 781

THERAPEUTICAL REVIEW.

Creosote in Chronic Constipation..... 855
Mixture Against Tapeworm......... 855
To Overcome Tetanic Contractions of the Uterus during Labor.......... 855
Barium Chloride in Tympanites in Cattle......................... 855
Mixture for Local Anæsthesia....... 856
Treatment of Mange in the Dog..... 856

REVIEW OF BIOLOGY.

Parathyroid Function.............. 279
Thyroid Function................. 280
Virulency of Muscles in Tuberculous Man......................... 280

CORRESPONDENCE.

Sale of Veterinary Degrees—Prof. Law Explains.................. 351
The Future of the Veterinary Profession.......................... 352
The Anæsthetic Uses of Chloroform and Cocaine.................... 420
Practicing in New York State While Living in Another State—Answer to a Correspondent............... 421
"Couldn't Fool the Farmers."..... 422
Docking Horses for Fashion's Sake.. 495
As to the Treatment of Eversion of the Uterus..................... 575
As to the Free Biological Products Supplied by the Government...... 640
As to the Next Meeting Place of the U. S. V. M. A.................. 717
A "Caustic" Communication from the Accredited Creator of the "Cavalry Caustic."...................... 720
Are there Such Things as "Fake Case Reports"?....... 783
An Original Method of Reducing Eversion of the Uterus........... 785
Army Veterinary Surgeons.......... 786
Dr. Butler Announces the Next Meeting Place of the U. S. V. M. A... 786
Veterinary Legislation in New York.. 859

VETERINARY COLLEGE NEWS.

Commencement Exercises American Veterinary College.............. 61
Commencement Exercises New York College of Veterinary Surgeons.... 139
Commencement Exercises Ontario Veterinary College.............. 139
Commencement Exercises United States College of Veterinary Surgeons.......................... 141
Commencement Exercises Kansas City Veterinary College.............. 141
Commencement Exercises Indiana Veterinary College.............. 142
Commencement Exercises McKillip Veterinary College.............. 142
Commencement Exercises Chicago Veterinary College.............. 204
Commencement Exercises New York State Veterinary College......... 281
Announcement American Veterinary College........................ 349
Announcement New York State Veterinary College.............. 350
Announcement University of Pennsylvania (Veterinary Department).. 350
Announcement McGill University (Faculty of Comparative Medicine and Veterinary Science).......... 419
Announcement Kansas City Veterinary College................... 419
Announcement New York College of Veterinary Surgeons............. 419

BIBLIOGRAPHY.

Diseases of the Dog and their Treatment.......................... 205
Veterinary Ophthalmology.......... 206
Pathologie Interne des Animaux Domestiques...................... 266
Bureau of Animal Industry, Reports for 1895 and 1896............... 266
Formulaire des Veterinaires Practiciens........................ 335
Sixth Biennial Report of the State Veterinarian of Michigan......... 336
Proceedings of the United States Veterinary Medical Association, Session 1897................... 636
Supplement au Nouveau Dictionnaire Pratique de Médicine, Chirurgie et Hygiene Veterinaire............. 638
A Text-Book of Horse Shoeing..... 638
Exercises in Equine Surgery........ 639
Diseases of Swine................. 639
Breeding Race-Horses by the Figure System........................ 787
The Veterinarian's Visiting List..... 788
Practical Toxicology for Physicians and Students....................... 788
Veterinary Blue Book.............. 862

OBITUARY.

J. D. Rutherford, M. D., V. S...... 62
John R. Hart, V. M. D............. 143
Lucian T. Bell, M. D., D. V. S...... 144
John Doris, Jr., D. V. S............ 145
Daniel Walsh..................... 145
William Heyser Harbaugh, V. S.... 567
Edward Loomes, V. S.............. 577
James Johnstone, D. V. S.......... 577
Finlay Dun, M. R. C. V. S......... 641
Alexander W. Stein, M. D......... 721
C. C Tietjens, D. V. S............. 722
John H. Adamson, M. D. C........ 722
A. L. Hummel, M. D............. 723
Oscar E. Busener. D. V. S......... 788
Carlisle N. Darke, D. V. S......... 789
J. J. Shoemaker, D. V. S........... 789
Samuel E. Queen, V. S............ 856

SOCIETY MEETINGS.

Veterinary Medical Association of New York County....63, 207, 209, 288, 518, 583, 656, 729, 797, 887
Illinois State Veterinary Medical Association........................64, 730
Massachusetts Veterinary Association.. 65, 216, 585, 658, 734, 800, 893
Maine Veterinary Medical Association. 66, 427
Minnesota State Veterinary Medical Association......66, 67, 361, 428, 796
Pennsylvania State Veterinary Medical Association.....68, 114, 432, 641, 891
Iowa State Veterinary Medical Association.................123, 734, 880
Ohio State Veterinary Medical Association......................127, 735
Veterinary Medical Association of New Jersey........................132, 659
Chicago Veterinary Society..133, 209, 287, 727, 864
Alumni Association of the American Veterinary College................ 134
United States Veterinary Medical Association..137, 216, 286, 355, 498, 588, 789, 892
Keystone Veterinary Medical Association....211, 282, 515, 585, 654, 725, 790, 891
Veterinary Medical Society of New Jersey and Vicinity..........215, 289
Pennsylvania State Board of Veterinary Medical Examiners..........216, 660
New York State Veterinary Medical Society............359, 433, 577, 732
Missouri Valley Veterinary Medical Association........359, 584, 732, 800
Association of Veterinary Faculties of North America..............360, 513
United States Association of Experiment Station Veterinarians........ 360
Virginia State Veterinary Medical Association........................ 423
Colorado State Veterinary Medical Association..................... 430
Veterinary Association of the District of Columbia................431, 581
Indiana State Veterinary Association.. 517
Tennessee Veterinary Medical Association......................67, 586
Ontario Veterinary Alumni of Massachusetts........................ 587
Montreal Veterinary Medical Association..................588, 652, 723
California State Veterinary Medical Association................ 650, 885
Veterinary Medical Society of the Ontario Veterinary College 657, 733, 798, 890

North Carolina Veterinary Medical Association.......67, 658
Genesee Valley Veterinary Medical Association.......659, 735
Ontario Veterinary Association 793
Wisconsin Society of Veterinary Graduates 800
Regular Class of Veterinary Surgeons. 799
Veterinary Medical Society of the University of Pennsylvania........... 889

MISCELLANEOUS.

News and Items ...68, 145, 217, 290, 361, 434, 518, 589, 669, 735, 796, 893
Veterinary Legislation............. 57
A New Universal Float............ 60
A Year's Progress in Medicine...... 198
The Procession of Modern Veterinarians 202
A Horse Becomes a "Ravin Moniack"...................... 203
Portland (Me.) Milk Regulations.... 217
The Tuberculin Test in Massachusetts..............258, 322, 402, 480
Minnesota's Amended Veterinary Law........................ 281
Rectal and Vaginal Irrigator........ 334
"Dropped Elbow" in the Horse.... 411
Prevention of Splenetic Fever....... 573
Will Wear Stripes.................. 574
Inoculations Against Rinderpest..... 629
Foot-and-Mouth Disease........... 631
To Improve Philadelphia's Meat Supply........................ 713
A Fire Department Veterinary Hospital.......................... 781
A Movable-Calk Anti-Slipping Shoe.. 783
Career and Direful Fate of Veterinary Surgeon Peas.................. 857

619.05
AV
v.21
cop 2

AGRICULTURAL
LIBRARY

AMERICAN VETERINARY REVIEW.

APRIL, 1897.

EDITORIAL.

THE QUESTION OF RECIPROCITY AMONG STATE VETERINARY EXAMINING BOARDS.

Taking for a text the report of the Committee on Intelligence and Education of the United States Veterinary Medical Association at its Buffalo meeting, the *Veterinary Journal* (England) for February indulges in a four-page editorial upon the subject of "Veterinary Education in America," and while it frankly admits that much satisfaction was experienced by its perusal, it finds many points to criticise. After a general review of the report the periodical finally gives its American brethren some good-natured advice and suggestions. One of the most serious objections which it finds against our rapidly developing science is the lack of reciprocity which the enactment of statutes by the various States is making more manifest every day, and which will soon begin to produce so many entangling alliances as to make the lot of the future itinerant veterinarian a hard one indeed. It says :

> "A more serious matter remains to be discussed. In this country the veterinary surgeon, though he has many grievances, has many solid advantages. It is true, he has a long and arduous college course, preceded by a stiff and searching preliminary examination. Still, let the student work hard and let him satisfy the examiners, who are for the most part reasonable men ; at the end of his course he gets his degree, M.R.C.V.S., and this means a great deal. A wise and patriotic government has conferred extensive powers on the Royal College of Veterinary Surgeons. Its degree enables a man to practice not only in England and Wales, Scotland and Ireland, but in all the British colonies and in the United States of America—wherever, in fact, the English language is spoken.

This is really a proud distinction and a great privilege; it has taken us many a long day and cost us many a hard struggle to obtain it, but there it is. Now, let us hear what is the state of things in America. 'A man may graduate at a college which has a sufficiently long course, and the first State he goes to he finds he has to pass another examination; he stops there for a few months, and realizing that he is not doing so well as might be expected, he goes to another State, and there he is called upon for another examination; so, no matter where he travels, if he crosses a State-line he must pass another examination and take out another license to practise! How would our young practitioners like it if they were compelled to pass a second examination and pay for another diploma when passing, say, from Berwickshire to Northumberland, or from Cheshire to Flint? The report continues, very wisely: 'We should try to get a uniform standard, so that after a man gets out of college, he may be permitted to practice in any State.'

"There is no doubt that this is the only solution of the difficulty, and I [Principal Williams, editor], as a veteran in the profession, would urge upon my brethren in America to buckle on their armor and gather their forces together, drill these forces carefully and energetically—severely, if necessary—and then, presenting an unbroken front, let them go forward to the State and central government and compel a recognition of their claims. But let them remember the words of Shakespear: 'Thrice is he armed that has his quarrel just.' The first thing to be done is to insist upon a uniform entrance examination for all the colleges that are to participate in the advantages, and not only uniform, but of a fairly high standard, controlled at the beginning, if thought desirable, by some educational body, such as one or other of the universities. Recalcitrant colleges will have to be lashed into efficiency and obedience, or else abandoned to inevitable poverty and ultimate extinction. Then the course of study in the various colleges will have to be codified and made of uniform standard. If there is to be an American Veterinary College, empowered to grant degrees of national validity, there must be unity in the schools, so that a man who has taken his degree may be trusted to have attained to a certain state of efficiency, and may pass current like a coin of standard weight and purity. There must be no debased coinage; there ought to be only one degree. If there are two, the tendency will be to the lower degree, to the so-called conservation of energy, and the status of the veterinary surgeon in America will never rise to its proper and natural level. An effort might be made to co-operate with the Royal College of Veterinary Surgeons in this country, so as to obtain reciprocity of advantages, but this project may be reserved for future discussion. I merely throw out the hint at present. I hope the day will come when veterinary surgeons all the world over will form one harmonious and compact body. But that day is still far off. My hearty desire is to see a beginning made in the right direction by my brethren across the Atlantic."

For his words of sympathetic interest in behalf of American veterinary education, which we must admit is to-day in somewhat of a chaotic state, while the rapid evolution of State laws governing and regulating the practice of the profession is rapidly complicating matters, we feel grateful to the distinguished editor of the *Veterinary Journal* and Principal of the Edinburgh Veterinary College. The REVIEW believes that the conception of the situation as enunciated in the above quotations is, in the main, shared by those members of the profession in America who have studied the question and know the contending elements which are to be harmonized. The necessity of such a consummation is admitted ; the means for its accomplishment is at present a very live issue, which cannot be other than benefitted by the freest discussion and most earnest study by the most active minds of our members, both in our association meetings and in our professional journals.

At the meeting of the Association of Veterinary Faculties of North America, held at the same time as the one to which the above-mentioned report was made, this same matter was very thoroughly discussed, and the benefits of uniformity in college requirements and in examining boards was fully appreciated, culminating in the naming of a committee (consisting of the editors of the *Journal*, *Magazine*, and REVIEW) to confer with and urge upon the promoters of State laws establishing such boards the urgent necessity of securing uniformity in requirements in the several commonwealths. The REVIEW pursued the subject in the issue for November, presenting the same aspect of the proposition, and invited the co-operation and opinions of all in the effort to attain that object.

The question of a national licensing board is not a new one, but it is a vexed one. Examining boards, as they are being formed, are State institutions ; for the Federal government to create a power superior to these boards would be an interference with the rights of States under the Constitution, and therefore inadmissible. There is no law, however, to prevent an amalgamation of State boards of examiners, by mutual consent, and the selection of an examining committee, consisting of a delegate from every represented State, these members to be the examiners of applicants in every portion of the United States, thus exacting a uniform requirement of proficiency and conferring a uniform degree. A position upon the "National Board of Veterinary Medical Examiners," or the "Veterinary Medical Examining Board of America," would be a trust of the highest professional honor, the conspicuity and *distingué* of which would be sufficient to attract the ambition of the most earnest and brightest of our members.

For the present, however, our efforts must be directed toward the implanting of a firm foundation, one which shall be capable of carrying safely the edifice which is to be erected upon it as the development of the profession gradually unfolds. We must have before us constantly the plans and specifications of this mansion, so that all that is done in the preliminary work may be in harmony with the grand consummation that will surely come. To this end, we must secure uniform laws in the various States, thus enabling reciprocity to exist between the examining boards, so that when a veterinarian has passed an examination before one board it will be a passport into every other State in the Union having a similar board, by recognition of one board by the other. This can certainly be accomplished if pursued in a spirit of earnest and intelligent endeavor, and when all States have secured laws and boards of examiners a convention of representatives from them may discuss the question of amalgamation for the purpose of forming a National licensing body, who shall give a uniform examination and a uniform degree.

We have arrived at that period in our progress when this question becomes an issue, germane, pertinent, and absolutely imperative.

THE REVIEW HAS ATTAINED ITS MAJORITY.—Twenty-one years ago the REVIEW began publication, and has continued without interruption to make its monthly visits to its readers ever since. We have no intention of reviewing its work during this long period, because it would be almost requisite to write a history of American veterinary medicine, for no event of importance in connection therewith has transpired during that time in which it was not an active factor if not the leader. It has grown from extremely moderate proportions to a very creditable magazine; and, if we are to believe the many assurances we receive from its readers, it is an honor to the profession of the country. It is not our purpose to indulge in any egotistical laudation of what it has been or what it is; it is not as great as it would like to be, nor so great as it will be. It was our aim in calling attention to its twenty-first birthday to felicitate the profession upon the notable event, and to say that it is theirs for all that it can be, theirs in heart and soul; that what it is they have made it, what it has done for them was by their inspiration, and what it is to be will be by their grace. That it loves its subjects, is proud to serve them, and pledges them that it will continue ever to fight their battles of progress; will be insistent against those who would seek to retard or hinder its onward march; will always be their champion for everything that is right and just, and their instrument in striking down all that threatens them from without, or which savors of retrogression or decay from within. In this connection it emphasizes the motto which has been constantly before it, "*Non Nobis Solum.*"

SERUM-THERAPY OF PURPURA HÆMORRHAGICA.—Prof. Olof Schwarzkopf informs us that the notice in our January issue reporting the discovery that equine anasarca is due to a variety of the streptococcus, needs correction. The disease which is termed *anasarca vrai* by French veterinarians is that known to English-speaking veterinarians as *purpura hacæmorrhagica.* In this way the discovery becomes intelligible and interesting, and the report that purpura can be successfully treated with the anti-streptococcus serum will be welcomed by all veterinary practitioners.

NOTICE TO MEMBERS OF THE U.S.V.M.A.—We are requested by Secretary Stewart to ask all members who contemplate presenting papers at the next meeting, which occurs in Nashville, Tenn., in September, to give him early notification, with the titles of their subjects, if possible. As this is to be the greatest meeting in its history, it is hoped that the volunteers will be prompt and numerous.

ORIGINAL ARTICLES.

BOVINE TUBERCULOSIS IN ITS RELATIONS TO THE HUMAN FAMILY.

By George H. Bailey, D.V.S., State Veterinarian of Maine.

A Paper read before the Maine Academy of Medicine and Science, at Portland, Feb. 8.

Ordinarily I would feel that an apology was due the members of this Academy in my taking up the required time of presenting this paper, were it not that I feel assured in advance, that no unfriendly or hostile criticism will follow its reading and discussion this evening, and that I can safely rely upon the same generous and fraternal support that has heretofore been so freely accorded me by the entire medical profession of Maine. Regarding, as I do, the invitation to address myself to so many men of special attainments in medicine and surgery as an honor I ought not to decline, not in a personal sense, but rather as a recognition and assurance to all veterinarians, that the barriers that have so long separated the allied professions are fast being removed, as our men are found more worthy to compete in the arena of medicine, with those who are seeking to solve those important problems of sanitary reform, and the preservation of the public health. All sciences gain by assisting one another, and we are surely and safely moving along parallel lines, as long as we work together for the benefit of mankind ; and it may be that ex-Governor Coburn " builded better than he knew," when, during the war, he was asked to appoint a surgeon for the 29th Maine Volunteers. " Yes," said the governor, " The 29th is a veteran regiment, and it shall have a veterinary surgeon."

The subject assigned me by your committee has entered largely into the clinical and practical experience of a busy practice during the last decade, and it is one about which there is no danger of any of us knowing too much, as long as it continues to head all the mortuary tables of the old and new world, and is of such vital importance to every man, woman, and child in the community, from the cradle to the grave. A disease that annually numbers among its victims 14 per cent. of the human family appeals with equal force and significance to the medical profession as it does to the veterinarian, within whose province and control the purity and freedom from disease of our dairy products more properly belong.

The establishing of a correct diagnosis of this disease is as indispensable for those engaged in human medicine, as for those who are occupied with veterinary sanitary reform, and while you gentlemen are restricted to experimenting upon your own species, the veterinarians have come to your support with new methods and new means of analysis in a form much more definite and precise than it were possible for you to employ.

What then is tuberculosis? It is the general name given to a class of diseases in animals, of which consumption in the human family is a common type, and has been known for many centuries under many different names. Tuberculosis in all its forms is caused by a specific microbe, the action of which upon the tissues produces histological and vascular changes which are characteristic of chronic inflammation. In general the tubercle bacilli may be disseminated either by the lymph, or the blood channels or by both combined. In 1882, Robert Koch, of Berlin, announced to the profession his great discovery. He had found and demonstrated the true and essential cause of tuberculosis, the bacillus of tuberculosis. He had not only found the bacillus, but showed that it was present in all tubercular lesions. He had isolated and cultivated the bacillus from tubercular tissue; and, finally, he had furnished the crucial test—had produced tuberculosis artificially in animals by inoculation with pure culture. A few years later the scientific world became highly interested in the announcement of a further discovery by Koch of a "lymph or tuberculin" that bid fair to become a cure for consumption in the human family. It failed, because of the fact that while it produced a characteristic rise in temperature, it rapidly accelerated the disease it was intended to cure. The action of tuberculin upon the tubercle bacillus being that of an excitant, it arouses the germs to increased activity, and they rapidly increase in number, inducing that form of the disease recognized as "acute miliary tuberculosis." This reaction is what brought tuberculin into disfavor as a cure. "*The remedy was worse than the disease.*" This result of tuberculin tests in the human patient, induced Professor Gutmann, of the Veterinary Institute at Dorpat, Russia, to test its applications to animals, and in 1891 he instituted a series of experiments in the tuberculosis tests followed by a series of post-mortem examinations through which he was able to demonstrate the presence of the disease, and that it could be distinguished from other diseases that are attended with a rise of temperature; and since then his discovery has been accepted by the veterinary profession throughout the civilized world. The theory has been advanced that repeated injections of tuberculin in cattle until they cease to react indicated that recovery is possible, but I believe the better reasoning to be that the tendency is to make the disease more chronic and less acute; and if persisted in the result will show that the "dead germs and the dead patient" will be buried together. Cattle may acquire an immunity from its use, the same as people do from taking repeated doses of arsenic, while its harmless effect upon a well animal can be best illustrated in the case of the Ayrshire cow "Rena Myrtle" in the Experimental Station herd of Vermont. This cow has been tested every six months since 1892, and in 1895 gave the largest milk and butter record they had ever got at the station from any cow of any breed, when she produced 546 pounds of butter.

Among micro-organisms, the bacillus tuberculosis, although one of the most infinitesimal of them all (about one ten-thousandth of an inch in length), is at once a despot and a millionaire. He will live in ice, maintain vitality at temperatures below 150° F. (65.5 C.), resists moisture, drought and decay, and bids defiance to the germicidal action of the gastric juice. The czar of all mankind (as well as of all the Russias), and responsible for more deaths among the human race than any other germ, while more people die annually from consumption than from war, pestilence and famine.

Tuberculin is made from pure culture of the tubercle bacillus, highly concentrated, until a maximum amount of its ptomaines are developed, then filtered through porcelain, the filtered fluid being heated to a high temperature to destroy the vitality of any and all germs. The German or imported tuberculin is put up in five-gram bottles, and has cost as high as $1000 a pint. Glycerine and carbolic acid are then added to reduce it to a ten per cent. solution, of which from two to four c.c. are injected under the skin of the neck or shoulders of cattle by means of a sterilized hypodermic syringe. The average normal temperature of a cow is from 101° (38.3 C.) to 102° F. (38.8 C.) and the normal temperatures are taken before and at the time of injection, and tuberculous cattle respond by a rise of temperature usually from the tenth to the twentieth hour after injection, a rise of 2° over the normal temperature after injection being ground for suspicion, unless there is some physical disturbance such as cows being in heat or near calving; but if the animal is healthy, there should be no rise of temperature, and no possible injury to the cow. Very old cows do not respond to the test as readily as primiparas, and I have met with several badly diseased cows in which no reaction occurred, the system being so thoroughly saturated with the already-existing tuberculin that the small amount injected had no apparent effect. Such cases can always be easily recognized, however, by physical examination, and have only been tested during experimental work.

The identity of tuberculosis in mankind and domestic animals being fully demonstrated, and being highly infectious, we now know that it is communicable from animals to animals, from animals to man, and from man to animals in return. Millions of the germs are in the air we breathe and in the milk we drink, so that inhalation, ingestion, inoculation and heredity, all contribute to disseminate the malady. Man is also liable to receive from the lower animals and to communicate to them

361799

other diseases, as hydrophobia, variola, glanders, syphilis, and cholera.

As it would be trifling with time to discuss the imminent danger of inhaling the dry dust of the sputa from consumptive men and animals, I pass at once to the consideration of the danger from milk, the great food product of the human race. I assume that the first thing that ever passed our lips was milk, either derived from our good mothers, or the " family cow," and while we shall always retain a reverence for both (perhaps not equally divided), they will always remain associated with our rock-a-bye-baby days, while life will be far too short to ever efface from our memories the nursery story of the "cow that jumped over the moon," which acrobatic performance still remains the " best on record." The ordinary inspection of milk brought into our cities demands that its average composition shall be water 87 per cent. and solids 13 per cent., the solids including fat, casein, milk sugar, albumen and ash ; the casein and albumen containing nitrogen, of special value in cheese making, and the fat for butter. The water contains most everything from pollywogs to bacteria, which immediately after milking may vary from zero to over 10,000,000 in a single cubic inch of milk, depending almost entirely upon the temperature at which the milk is kept. The influence of temperature on the growth of bacteria is well known, and all milk should be kept below 50° F. until sterilized or consumed. Judging from tests thus far made abroad, city milk which contains not more than three or four million bacteria per cubic centimeter may be regarded as exceptionally good for European cities, while considerably over two hundred distinct types of ordinary milk bacteria have been described in literature up to the present time. Milk as it exists in the udder of a healthy cow is germ free, that is, it is practically sterile ; but the milk that comes to the consumer contains a large number of living germs. Dr. Freeman, of New York, pathologist to the foundling hospital, in the *Medical Record*, gave a practical demonstration of the extent of this contamination. Three petri plates, three and one-half inches in diameter, containing a layer of sterile nutrient gelatine, were exposed for two minutes each on a gentleman's farm near New York. One was exposed out of doors, a second in the barn, and a third under a cow just in front of the pail during milking. Subsequent examination showed that the plate exposed out of doors contained six bacteria, while that exposed in the barn received one hundred and eleven bacteria, and that exposed under the cow received one thousand eight hundred bacteria. If the latter number will fall from the belly of a cow during milking in a circle three and one-half inches in diameter, in two minutes, one can easily appreciate the immense number that will fall into an ordinary milk pail during the whole period of milking, and this emphasizes the fact that the great secret of obtaining a proper supply of milk is to have a healthy cow and to keep that cow clean.

Dr. Freeman summarizes the diseases that may be conveyed by milk as, 1st, those in which the pathogenic micro-organisms which are introduced into the milk are conveyed from the body of the diseased cow, as tuberculosis, anthrax, and acute enteritis. 2d, those in which the pathogenic micro-organisms are introduced into the milk from some other source either during or after milking, as cholera, typhoid fever and diphtheria. 3d, those caused by milk which contains poisonous agents developed by bacterial growth.

Maine produces approximately 58,000,000 gallons of milk per year, and makes about 17,000,000 pounds of butter, while New York City alone consumes more than seven millions of gallons of milk every year, and the produce of the United States is five billion gallons annually. How much of this milk contains the "germs of death" may well challenge our attention and best efforts to make known.

Prof. Ernst, of Harvard College, and Dr. Peters, State Veterinary Surgeon of Massachusetts, report from the result of their experiments conducted under the most exacting conditions and with every possible precaution against contamination, that the proportion of positive results in a lot of cows affected with a high degree of general tuberculosis was 80 per cent. ; in a lot affected with only a moderate degree, 66 per cent. ; and a lot in which the disease was localized in the lungs, 33 per cent. Dr. Ernst says: 1st, and emphatically, that the milk from cows affected with tuberculosis in any part of the body may contain the virus of the disease. 2d. That the virus is present whether there is disease of the udder or not. 3d. That there is no ground for the assertion that there must be a lesion of the udder before the milk can contain the infection of tuberculosis. 4th. That on the contrary the bacilli of tuberculosis are present with no discoverable udder lesions.

From 114 samples of milk from cows showing clinically no udder infection, 31.5 per cent. proved tuberculous by the microscope ; of 12 pigs fed with the same, 50 per cent. proved tuberculous ; and of 23 calves fed with the same, 25 per cent. proved tuberculous. In response to Dr. Ernst's inquiries addressed to physicians and veterinarians, the following answers were received from those who had observed or suspected the infection of the human family from tuberculous milk. From 1013 medical men he received replies : Positive, mother to child, 8 ; positive, cow's milk to child, 11 ; suspicious, 16. The replies from veterinaries were much more conclusive. From 54 veterinaries he received replies : Positive cases, 14 ; suspicious 9. Dr. Ernst remarks, " The latter is startling in its percentage, until one remembers the greater facilities the veterinaries have for observing such cases and their origin." Dr. Gutmann, of Chicago, reports, " In 38 specimens of milk inspected, in only one of them was it possible to demonstrate the presence of the tubercle bacillus microscopically, but in 38 injections of the same milk in animals, we had transmission by tuberculosis demonstrated six times."

Bollinger showed that a pure culture of tubercle bacilli gives positive results in inoculation experiments in a dilution of one to 400,000 ; thus showing that the milk may be infectious when the bacilli are so scanty as to be undiscoverable without an extremely exhaustive examination.

Dr. Williams (M. D.), of Massachusetts, says, "I have seen many cases of tubercular disease from milk, mostly in hand-fed babies of perfectly healthy parentage, developing tabes mesenterica, phthisis and tubercular meningitis."

Dr. Hallock (M. D.), of South Carolina, writes of a case where a strong, vigorous child, without a trace of disease in its ancestry, lost its mother at birth, and was suckled by a woman well advanced in pulmonary consumption in opposition to his remonstrances. The child was ailing ever after, and died of tuberculosis. I pronounce this a case of tuberculosis being transmitted through the milk of the woman who nursed the child.

Dr. Strang (M. D.) reports in his practice, "A well developed five-year-old boy from sound parents, whose ancestors on both sides were free from hereditary taint, succumbed, after a few weeks' illness, with acute miliary tuberculosis of the lungs and enormously enlarged mesenteric glands. A short time before the family cow had been killed and found to be the victim of advanced pulmonary tuberculosis."

Dr. Demme (M. D.) reports the case of four infants in the Child's Hospital at Berne, the issue of sound parents, without any tuberculous ancestry, that died of intestinal mesenteric tuberculosis, as the result of feeding upon the unsterilized milk of tuberculous cows.

While inspecting a herd of cattle a few years ago in Eastern Maine, I had just given an unguarded diagnosis of tuberculosis in a fine-looking Jersey cow, when a woman's sharp voice rang out behind me, "For God's sake, Doctor, don't tell me that, my baby has been fed on that cow's milk," and although the story was told the mother at the time that the cow proved sound, a broken-hearted mother now knows that I told her the truth.

A Scotch family, all of sturdy health, had a herd of cows which developed tuberculosis. Two daughters, being young, were brought up on the milk. Their two older brothers, being more fond of whiskey than milk, are still living, healthy and hearty, while the two sisters are lying in their graves, victims of tuberculosis. I also have in mind the case of two young men whose history was free from phthisis, raised upon a farm in Maine, where a herd of cows proved tuberculous; the younger remaining upon the farm and living largely upon milk; the older coming to Portland and drinking the more popular beverage of this seaport town. The younger man long since died of phthisis, while the older brother is still with us, although just at present in the "Keeley."

A child four years old, great grandson of Henry Ward Beecher, recently died in New York of tubercular meningitis. There were no hereditary tendencies to the disease known. The certainty that he had the disease, and the inability to account for it from human agencies, led the physicians to suspect the milk of two Alderney cows on which the child had been mainly fed. The tuberculin tests and the post-mortems showed that both animals were tuberculous.

Dr. Stalker, of the Iowa Board of Health, writes, "A few days since, I made a post-mortem of a cow, the milk of which had been used to nourish an infant. The child died, and the autopsy revealed in the clearest possible manner extensive tuberculosis. I know of a large herd of cows in Maine, several of which proved tuberculous, where the owner kept a large watch dog constantly in the barn and fed him with all the milk he wanted. That dog developed a case of mesenteric tuberculosis, and the post-mortem showed almost every abdominal organ affected. Swine are also very freely infected by the ingestion of milk, and our State Commission have several times discovered hogs that had been fed the skim milk of tuberculous cattle, badly diseased. A Vermont herd revealed seventy-eight out of ninety-one animals diseased by tuberculin tests and many of the swine fed on the skim milk from the dairy were found as tuberculous as the cows. On another Vermont farm where the disease was located, over sixty of the cows, over one hundred hogs, all the chickens, the dogs and the family cat were exterminated and all proved to be diseased on autopsy."

That the blood can and does infect, as well as the milk, is shown by a recent Massachusetts experiment, where a litter of pigs (whose mother was proved to be free from the disease) were kept under a slaughter house where they had no food but corn-meal and the blood drippings from slaughtered tuberculous cattle ; and were all found badly diseased in a few weeks.

Dr. Dewerve (M. D.), of Paris, had among his patients three brothers who successively sickened and died of tuberculosis. They had shared the same bed, and were all bed-bug bitten. Thirty bugs were caught, and put upon three healthy guinea pigs, all of which soon died, and post-mortems showed well-marked tuberculosis. From the diluted and filtered pulp of fifty crushed bed-bugs, bacterial cultures were obtained which caused typical tuberculosis when inoculated.

Dr. E. O. Shakespeare, U. S. Cholera Commissioner, says, " With all its terrors, cholera is not nearly as deadly as tuberculosis, and it has been found that in infants and young children in some large cities the mortality from some form of tuberculosis is far greater than is generally believed, amounting in some localities to one-fifth of the deaths in the young, of which the *Archives de Medicine* says that ' of the population of the globe, three millions die annually of consumption.' " The fact that milk is consumed largely by infants and invalids for many of whom it is the exclusive article of diet, accounts largely for the intestinal troubles of children, whose powers of absorption are much more active than adults.

Dr. E. F. Brush (M. D.), of New York, calls the cow, " the wet nurse of consumption," and explains the connection between animals and man. " Scrofulous females in the human race usually secrete an abundance of milk, because there is an unusual tendency to glandular enlargement and activity. As the mammary is the perfect type of a glandular structure, it is stimulated to increased action. A scrofulous cow is usually the largest milker ; and the closest kind of consanguinity has been practiced by breeders, with the object of producing a scrofulous animal, not because she is scrofulous, but because the particular form she represents are the largest yielders of milk." As Dr. Brush is a large breeder of Jersey cows as well as a prominent physician, I think we can safely rely upon his conclusions.

I quote Dr. Whittier (M. D.), who compares the causes of syphilis and tuberculosis. He says, " One man is not more predisposed to either disease than another ; syphilis affects one person more than another because the virus finds a better lodgment upon the mucous membrane. Tuberculosis finds also fortuitously, a better nidus in one case than another. The virus of tuberculosis is lodged in one case, and not coughed up ; just as in syphilis the virus is secreted, and not washed off."

It is less than a quarter of a century ago since glanders and tuberculosis were considered the same disease, and glanders in man has often been mistaken for syphilis. Cattle, fortunately, possess an immunity from glanders, and no cases are recorded.

In the northern part of New York City, there were recently tested 139 cows, 27 of which were found to be tuberculous, and these same animals had recently been supplying with milk the New York Juvenile Asylum and the Institute for Instruction of the Deaf and Dumb.

In a dairy in England, three cows were found to have tuberculous disease of the udder. In the institution to which this milk was supplied, the mortality from tuberculosis during the past year was thirty per cent., and during the preceding year forty per cent. of the total mortality.

The protoplasmic problem might be solved by Pasteurization, which can be successfully applied without lessening or injuring the nutritive value of the milk. Heating up to 167° F. (75 C.) for fifteen or twenty minutes and then cooling rapidly as possible, is sufficient to destroy the pathogenic germs which are most feared in milk, including the bacillus tuberculosis, bacillus typhosis, the bacillus diphtheria, and many other pathogenic bacteria. A higher temperature coagulates the albumen, lessens the digestibility, and increases the liability to constipation. Separating the cream by centrifugal force " Separators," is also said to free the product from not only large numbers of the bacilli but also a large amount of other impurities.

The virulent outbreak of tuberculosis upon our own State College farm, together with those of Massachusetts, New Hampshire, and Vermont; also the Insane Asylum herds of eastern and northern Illinois, and the Insane Asylum herd at Willard, New York, should impress upon us all the vital importance of investigating this source of food supply, for the inmates of all our charitable and public institutions. The herds supplying the Maine General, and Central Maine Hospitals, the Augusta Insane Asylum, all industrial and juvenile schools in this State, should be tested at least once a year for public safety, and we should all agitate and educate together upon this subject until it is accomplished. In this connection by way of negative evidence it is interesting to compare the geographic distribution of cattle and tuberculosis. Dr. E. F. Brush, of Mount Vernon, N. Y., has given years of study and investigation to this matter, and in his papers, scattered through the New York *Medical Journal*, makes the statement that tuberculosis does not exist among people which do not employ milch cattle. Dr. Rich says: "The inference to be drawn is not that human tuberculosis comes mainly from cattle, for man gets his infection mostly from his fellow-man, but that possibly the primary source of infection, and more or less of its maintenance and extension are due to cattle. Whatever be the inference, there is little question that human consumption is relatively less prevalent in countries where there are few or no cattle, such as Iceland, Newfoundland, Algiers, Peru and Islands of the Pacific, Norway, Sweden, Lapland and Greenland, where reindeer, goats or mares furnish the milk. In some of the western South American countries, cattle are used only for beef, since so many cases have been traced to the use of milk, that the entire population with scarcely a single exception leave it alone. The flesh itself only contains tubercles in very rare cases. The bacilli are non-motile, and consequently cannot penetrate into the tissues without assistance, and muscular tissue is a substance so unfavorable for the bacilli that they cannot multiply in it. In the beginning they are isolated and in the interior of cells, but are constantly found in places where the tuberculous process is commencing or actively progressing. The comparative danger from the use of milk and meat is greatly diminished in the latter, by the fact that all civilized communities are supposed to cook their meat sufficiently to destroy all germs contained in the small lymphatic glands between the muscles, rather than in the muscles themselves." Dr. Law points out "another danger from the disease, through the life product of the bacillus," and says, "It is this extension of tuberculosis under the influence of the toxic products of the bacillus which raises the most important question in connection with the consumption by man of the flesh and dairy products of tuberculous animals ; and yet the question has been overlooked by sanitarians in the most unaccountable way. It has seemed enough for them that the living tubercle bacillus did not exist in the juices of the muscles nor in the meat. It seems never to have occurred to them that all the soluble poisonous products of this bacillus are constantly circulating in the blood which passes through the muscles, and that they traverse the blood-vessels of the mammary glands, and escape into the milk." Accepting then as undeniable the presence of the soluble chemical poisons in blood, flesh and milk, it follows that those who eat this flesh or milk are constantly taking in small doses of tuberculin ; and in that case, if they are already the victims of tuberculosis, in however slight or indolent a form, this continuous accession of the poison will rouse the morbid process into greater activity and secure a dangerous extension.

Dr. Treon describes the poor, emaciated, diseased animals furnished to the tribes of Northwestern Indians, how they eat the liver, tallow and entrails raw and fresh, and how the carcass is dried, pounded and packed in skins to be eaten later, uncooked, even though the animal died of disease. The Indian mortality from consumption is 50 per cent. of all deaths from several points, while at Crow Creek, Dakota, 50 out of the total Indian population of 1200 die yearly of consumption and scrofula.

But there is another side to all this : Consumption in man is communicable to animals and none such should be allowed to care for cattle, or be engaged in dairy work; but as long as phthisical patients ignorantly spread the disease in all directions by allowing the sputum to fall in any locality where it may be converted into dust, such must be the case. It would be far better for the community, in my opinion, to isolate the patients themselves, than to allow their sputa to become thus disseminated.

The manure in tuberculous cattle plays exactly the same rôle as does the sputum in human, though there are cases enough where the alvine discharges of human beings are full of bacilli, and occasionally the urine.

The bacilli being spore bearing and often practically indestructible under natural conditions, may not the spreading of such discharges on fields be one way, and not an inconsiderable one by which the air contains tuberculous germs?

The most frequent form of tuberculosis is consumption of the lungs, and in persons affected with this disease, their sputa is loaded with the infective microbe, it having been proven that the expectoration in a single given case, contained more than four thousand million tubercle bacilli in a single day, while a single spit contained over sixty millions of them. In considering the ways in which tubercle bacilli cause infection, Dr. Salmon, Chief Government Inspector of Washington, D. C., places them in their order of frequency as follows:

1st. By inhalation into the lungs.

2d. By ingestion into the digestive tract in the milk of tuberculous cows.

3d. During coition, when the sexual organs are tuberculous.

4th. From the tuberculous mother to the fœtus of the infant.

Eight cases of consumption occurring within a few months in an English convent were traced to a single case. There had been no isolation, but all had slept in the same general dormitory. Cornet found during twenty-five years in thirty-eight cloisters, 2099 nuns acting as nurses had died. Of these, 1300, or sixty-three per cent., had died of tuberculosis. Prison consumption is notorious, and Kennan reports it to be the great scourge of Siberian prisons. Dr. J. B. Ransom, physician of the State prison, Clinton County, New York, states that the percentage of total deaths from tubercular disease in that prison is over 80 per cent. In a lying-in hospital in Berlin was a nurse whose business was to resuscitate children who were born asphyxiated by breathing into their lungs. Of ten infants so treated every one died of tuberculosis. The nurse died and upon examination showed that her lungs were tuberculous. The children were all shown to have been of healthy parents.

The *British Medical Journal* reports the following, which shows the tenacity of the life of the bacillus under ordinary conditions: "A family of nine occupied a house inhabited ten years previously by two tuberculous patients. A short time after, although the whole family had been in splendid health, three among them showed symptoms of tuberculosis. They used the same bed-room as the former tenants. Dr. Ducor had pieces of wall paper and dust from the ceiling and walls examined. In both cases the tubercle bacillus was found. Dr. Flink (M. D.), at a recent meeting held to discuss this subject, showed by a map of the city of Philadelphia, which located every house in the fifth ward in which tuberculosis had occurred in twenty-five years, that the disease chiefly prevailed in a series of infected houses which constituted less than one-third of all the houses in the ward, but furnished more than half the deaths. It was also observed that a large percentage of all the cases of mesenteric tuberculosis in children occurred in these houses."

Direct inoculation is also another source of danger. Dr. Ernst cites a case of localized tuberculosis of the tongue: "A gentleman perfectly well on Thanksgiving day, by eating something affected with tuberculosis, became infected with tuberculosis of the tongue. He had a nodule half as large again as an English walnut, which was pure tuberculosis, as was shown under the microscope in a piece taken off with the use of cocaine." A woman whose ancestors were without tuberculous taint, ate eleven chickens bought from a neighbor. These chickens had been in the habit of eating the spittle of their consumptive owner. The woman soon developed a well marked case of tuberculosis of the bowels. The case in Springvale in this State has been already reported by me, where a woman in consumption had raised a flock of chickens that had access to the sputa cups of their owner, and after the woman died, every one of them were found affected with tuberculosis.

Pieffer attended a veterinarian of good constitution, without hereditary pre-disposition, who cut his right thumb deeply during a post-mortem on a tuberculous cow. The wound healed but remained swollen. A year later pulmonary tuberculosis had developed and in two and one-half years after the wound the man died. Post-mortem examination showed tuberculosis of the joint of the wounded thumb and of the lungs.

The contagion and infection of the disease being universally conceded, I approach the more debatable and complex problem of heredity, as one having afforded me so many clinical and convincing evidences of its presence and importance as to commit me firmly to its support. It is but a few short years ago that the medical profession were firmly united in their belief in the heredity of tuberculosis, and although some modern writers are wavering in their faith, the laws of nature are just as immutable as ever, and one of the most paramount of these seems to be that the fundamental law of heredity is that "like begets like" or the likeness of some ancestor. Webster defines heredity as transmitted from a parent to a child, as hereditary bravery, hereditary disease, etc. As long ago as in the reign of Augustus Cæsar, the first Latin lyric poet wrote not as a fanciful hypothesis, but as an established principle :

> "The brave begotten are by the brave and good,
> There is in steers, there is in horses blood,
> The virtues of their sires. No timid dove
> Springs from the coupled eagle's furious love."

Oliver Wendell Holmes gave utterance to his faith and belief of heredity when he said "Of the human family I go always, other things being equal, for the man who inherits family traditions and the cumulative humanities of at least four or five generations.' "

And Rev. DeWitt Talmage says that "the physical and mental and moral qualities are inheritable, is patent to every one who keeps his eyes open. The longer I live the more I believe in blood—good blood—bad blood—proud blood—honest blood—thieving blood and cowardly blood. As Indian blood means roving disposition, Roman blood means conquest, and the Jewish faculty for accumulation, you may trace back to Abraham, of whom the Bible says, 'He was rich in silver and gold and cattle.' "

No hereditary disease is hereditary in every instance, even inherited syphilis is very feebly contagious, while acquired syphilis is actively so. We hear a great deal about the scrofulous diathesis, the predisposition and susceptibility of tuberculosis, and if these terms are to be interpreted as applying to men or animals who have had transmitted to them weak, frail and debilitated bodies, as opposed to those who have descended from parents whose stamina and vigor were sufficient to overcome and resist tuberculosis, and all other germ diseases that practically amounts to immunity; or that men and animals that have descended from *tuberculous parents* inherit a special or constitutional predisposition to the disease. I accept their logic, just as in "seed time and harvest," all seeds will grow more readily in favorable soil and climate than on stubborn, rocky ground, so the systems of animals differ in their attractability or receptivity to propagate disease.

The predisposition to scrofulosis has also been attributed to a weakness or imperfection of the lymphatic system, and great stress has been placed on the importance of an imperfect circulatory and respiratory apparatus as a *predisposing* cause of tuberculosis; but I am not aware that a person thus consumptively inclined is therefore of necessity possessed of less power of resistance against other infectious diseases; and that able physician, Dr. Mitchell, of Bowdoin College, has said he thought it at least *unfortunate* that people were born with *sus-*

ceptibility; and this fact seemed to him apparent from the study of diseases *other than tuberculosis.*

To avoid *predisposition* then, in order to be "born right" a man must ante-date to the vigorous ancestry of his great, great-grand parents; and if this principle of heredity were kept in mind in breeding dairy cattle there would not be so much tuberculosis.

Blakewell, one of the most noted breeders of live stock in Great Britain, regarded the animals on his farm as wax in his hands, out of which in good time he could mould any form that he desired to create. He believed that the familiar maxim, "like begets like," was not limited to a general similarity of off-spring to parent, but extended to the minutest details of the animal organism.

Tuberculosis is far less easily communicable to other individuals than such parasitic diseases as anthrax or diphtheria, typhoid fever and Asiatic cholera; and no germ will cause infection unless it finds nutritive conditions of such a nature as to render it pathogenic (disease producing), and as a rule, between diseased and absolutely healthy individuals does not exist. In other words, tuberculosis is only easily infectious in individual men or cattle possessing certain acquired weakness, unnatural to them in health. The study of bovine tuberculosis indicates that the essential environmental conditions favorable to the production and support of a constitution insusceptible to the action of tubercle bacilli, is one which offers the freest possible exposure to the elements, and an abundance of untrammelled exercise in the open air.

(*To be continued.*)

JURY DUTY IN ENGLAND.—A number of veterinary medical societies of England are agitating the passage of an act of Parliament exempting members of the profession from serving upon juries. It was the opinion of the Yorkshire Association that the question should be continually agitated, but that the chances of its being acceded to are very slim.

AZOTURIA.

By John R. Hart, V.M.D., Philadelphia, Pa.

A SYNOPSIS OF A PAPER READ IN 1883, WITH SUCH MODIFICATIONS AS CIRCUMSTANCES AND THE LAPSE OF TIME WOULD SEEM TO WARRANT.

That paper contained the expression of an opinion much criticised at that time that azoturia was purely a liver and kidney disease, and the careful investigations of the subsequent fourteen years but confirmed the opinion that azoturia is primarily due to a diseased liver.

Liver.—Pathology teaches us that the function of the liver is to secrete and excrete. Any disease that may retard this work or any derangement of this organ lessens the secretion of bile, and bile is one of the most important factors in the animal economy. The other functions, notably the one that controls the effect upon the blood during its transit through the hepatic circulation, admirably fit the blood is for its subsequent purposes in the animal economy. From autopsies I have made I am led to believe that there is more derangement to the system through an inactive liver than we are aware of. Any alteration of this organ has a tendency at all times to cause or bring on indigestion through its inaction. As one of the chief functions of the liver is the secretion of bile, which means purification of the blood by ultimate excretion of effete matter, as you all know that bile is not discharged through an excretory duct or from a reservoir in the horse, but passes directly into the intestinal canal, where it mingles with the chyme directly after it leaves the stomach. This shows the relation it has with the food with which it is mixed. We know it is alkaline in its reaction. Any alteration from its natural constituents would have a deleterious effect upon the general system.

Pathology teaches us that the liver arrests or transforms toxic substances, which originate in the intestinal canal. If you have an inactive or diseased liver it will not arrest or transform the toxic substance, which passes into the blood. The liver arrests and is constantly transforming toxic products. The comparative toxicity of the portal and hepatic blood demonstrates that its poisoning has no time to be produced. The animal appears to succumb to an intestinal hyperæmia, and consequent cerebral congestion, in some cases. Prof. Leonard Pearson, of the University of Pennsylvania, some six years ago, called my attention to a gray gelding at that institution on which he had held an autopsy, which disclosed the liver fatty degenerated, kidney very much congested, and lungs congested, and the entire alimentary canal in a badly congested condition. The owner of this animal said that the animal had left the stable in apparently sound health three hours before its death.

I think we may, therefore, conclude that the liver is an organ of protection to the animal, that it arrests more or less toxic material in general, not the whole, as a part passes into the urine.

While it is admitted that the liver is not the only agent which acts the part of a protector to the organism against poisons, there may yet be made to intervene as an auxiliary agent of protection, rapidity of intestinal expulsion by the stools. Hardening of the intestinal contents, which, transformed into a hard fæcal mass, becomes almost inoffensive, because it no longer allows of absorption. We have a hurtful constipation, and from this the nervous system is made to suffer and the theory of reflexes occurs.

Continued unusual pressure produces excessive activity of the nerve supplying the part, excitability is finally abolished, and the exhausting of the nerve occurs locally, as in over-distension of the bladder. A constantly overloaded condition of the bowels may produce either of these local results on the nerve filaments themselves. This effect travels backward to the controlling ganglia in the lumbar cord, and, defecation being essentially a reflex act when its directing centre is not sensitive to the controlling impulse of the brain, does not occur promptly, and the constipation thus reacts upon the whole system. This produces one of those cases of azoturia that is invariably fatal.

As for the biliary salts, they do not kill by direct intoxication alone; they dissolve and break up blood globules and also other cells, striated muscular fibres and cells of the liver. They, therefore, cause anatomical lesions, and intoxication arises from the setting free of toxic substances, which enter into the composition of the cellular elements. This intoxication develops but slowly; so long as there is functional activity of the kidneys, all is well, but if this activity ceases then death might result by the potash and other products of cellular destruction. It is said that if all the bile which the liver secretes passed directly into the blood man would be poisoned by his own bile in eight hours. If all the urine that the kidneys secrete passed directly into the blood, man would be poisoned by his own urine in two days. We see the danger which results either from an impediment in the way of the elimination of bile or from its absorption. Fortunately more than one-half is eliminated in twenty-four hours by the digestive canal. What becomes, then, of the half of the bile which is not thrown out by the digestive canal? Does the liver destroy it? Do the tissues change it? These two hypotheses are possible, but are not demonstrated. What is demonstrated is that in the intestine a portion of the bile ceases to be absorbable. The coloring matter and the biliary salts are metamorphosed, precipitated, or rendered insoluble; yet in certain morbid conditions bile may be absorbed in the liver itself at the margin of the hepatic cells. In these cases, if the kidneys remain permeable, it becomes a menace to intoxication; if they have ceased to be so, poisoning is the result.

The above facts lead to the conclusion that when, from a faulty liver, we can have, aside from liver and kidney, a third source of poison for the blood, as we do in this disease of azoturia (that is, putrefaction), not only that which arises from the imperfectly digested matter, but that which the presence of micro-organisms in the intestinal tube incessantly maintains in the digestive canal the conditions most favorable for the elaboration of poisons are realized. Therein are found nitrogenous substances already peptonized, and peptones are, as you know, excellent culture media for microbes.

The conditions favorable for the maintenance of putrefaction are so numerous that we ask whether digestion can ever go on normally. Fortunately the organism secretes in the stomach, on the introduction of food, a juice which is opposed to all fermentation, hydrochloric acid. Bile is regarded as capable of prolonging the arrest of fermentations, but bile is capable of undergoing fermentation itself or of putrefying. It can, therefore, only feebly oppose fermentation in the small intestine. At any rate, it can have no influence upon those which are actively carried on in the large intestine. Thus do we find the small intestiue, on the one hand, and the large intestine particularly on the other, capable of passing products of putrefaction into the blood. But are the putrid substances toxic?

Gaspard, in 1822, established the fact that putrid substances are toxic, and that they are actually more so than substances arising from disassimilation. He injected into the veins of animals liquid arising from putrefaction of blood of meat. He induced faintness, diarrhœa, vomiting, hyperæmia of mucous membranes, then death. At the autopsy ecchymosis of the digestive canal was seen; also of cellular tissues, of the muscles of the heart, swelling of the spleen, and mesenteric glands, and congestion of the lungs. All these conditions are found after death in azoturia, except vomiting.

We may have alterations occur in the liver, due to a congested condition. If continued or frequently repeated they would tend to a result in bilious contamination of the blood. Or, perhaps, from some previous disease, we may have alterations in the liver that would have a tendency to prevent it from doing its proper work. Any inability of the liver or derangement of its functions would cause changes to take place in the alimentary canal, and is in part reabsorbed into the blood, causing contamination.

Now, what do these alterations do, or what are the toxics? The organism contains poisons, the origin of which we know, the destruction of cells, disassimilation of secretions, indigestion and putrefaction. The digestive canal contains these poisons. Those which come from the ingesta, bile, and putrid material, therefore, should be toxic. Experimentation has demonstrated that they are toxic from the potash and ammonia, toxic from bile and putrid material. While you cannot demonstrate experimentally that the poison enters the blood, you can demonstrate that it leaves the blood. When bile ceases to flow into the intestines it passes into the blood. This problem is in doubt. Any alteration in the liver caused by disease will prevent the excretion of effete material. Now, if such is the case, where will this effete material go? Or will nature allow it to so flow, or be taken up by some channel whereby the blood will not become contaminated with this injurious material? It has been shown that it does not. The result is that the effete material collects in the blood. With what results? To act as powerful irritants in the animal circulation. This material first prevents the proper flow of the blood; second, causes a complete stasis; third, a dilatation of blood-vessels; fourth, a direct pressure upon the nerves; fifth, a complete loss of power from pressure on the nerves; sixth, decomposition to follow.

In my paper on azoturia in 1883, I stated that azoturia was purely a liver and kidney disease. At the present date I feel more than convinced that azoturia is purely of this nature. The question may be asked why should the kidney be a factor in this disease of the liver? I answer, in conjunction with the paralysis by dilation of the renal arteries, caused by the effete material circulating in the blood.

Guitaris says, that any agent to cause an obstruction of the circulation or nervous influence may act by trophic derangement by causing circulatory disturbance, vaso motor action, the necrosed part may be absorbed, retained, or discharged. We have general excess of blood where there is a plethoric condition, a true hyperæmia, and with this we have nervous influence. This may be due to paralysis of the vaso-constrictors, whereas the outflow of blood is prevented.

Now, from a pathological standpoint there is really no disease of the blood, but rather of organs, and as we study the conditions of the blood, the blood-making structures are mainly the bone-marrow, the lymph glands and spleen ; the blood-destroying organs, of which the liver and spleen are important ones.

The functions of the lymph glands are to form blood corpuscles, to filter lymph, for this flows between the cells of the lymphadenoid tissues. In this way injurious substances are prevented from being spread in the circulation at times.

Dr. Wood says that hemaglobin causes the dark cherry-brown color in blood. The enormous blood pressure forces the capillary circulation through the tissues.

Kidney.—Now, as to what part the kidney takes in this disease, as a preventive organ, and to what extent the nerve functions are involved, as one with the other, to cause the disease of azoturia.

Pathologists usually divide the course of a disease into three stages or periods,—first, that of increase ; second, that of acme, in which the symptoms remain stationary ; third, that of decline. But these stages are far from existing in all diseases, or following one another in regular succession. In acute disease alone are they presented with distinctness and regularity. In the disease of azoturia, which breaks out suddenly in its full force, so that the first stage is wanting, and others which terminate abruptly in death without any period of decline.

It will be quite legitimate to attribute to it only one part of the phenomena which might supervene when the impermeability of the kidney is such that it can no longer eliminate the toxic substances produced by the organism, in proportion to their formation. With a kidney acting well, things may not go further, but if the renal emunction is insufficient, we may see developed a fraction of uræmic intoxication through simple exaggeration of intestinal fermentation. While the kidney itself may not be really diseased, it will be sufficient, for the quantity of toxic material introduced into the blood should exceed the activity of the kidney and its ability to eliminate it.

The quantity of toxic matter eliminated by the kidney in twenty-four hours is, without doubt, sufficient to kill the whole body. Now, if the kidney is unable to do its work properly from some previous ill condition, or has been doing some extra work for the liver, the blood will quickly become contaminated, and the result will be azoturia, as if all the bile secreted in eight hours was introduced suddenly into the blood, we should see fatal nervous effects produced immediately; but, as elimination is incessantly being effected through the kidneys, and as the fibres of connective tissues are being incessantly colored, whilst the blood reabsorbs only gradually, nervous accidents are thus averted. The tissues serve to protect the organism against these poisons. Experiments have shown that this coloring matter is ten times more poisonous than biliary matter, salts becoming fixed.

When we consider the functions of the kidney we are more able to understand the important work the kidney is called upon to perform in this disease of azoturia. It eliminates all superfluous matter that may arise; blood filled with effete material will stop the secretion. It requires the kidney to be considerably diseased, for owing to its permeability it is sufficient alone to eliminate the poison formed by the organism in proportion to its production. Below this rate commences intoxication. But before this arises we see abnormal phenomena appear. First, albuminuria (albuminuria is the accident of bad repute in diseases of the kidney). The extreme cases belong chiefly to amyloid nephritis, because in such the liver, spleen, stomach, and intestines are diseased, all the organs whose function it is to transform the peptones of digestion into serum-albumen have undergone deterioration at the same time as the kidneys. When such a large number of organs are diseased we can scarcely regard all the accidents which happen as due to renal impermeability. We cannot say that there is uræmia, nor even kidney disease. There is a general disease of organs concerned in assimilation.

The inability of the kidney to do this extra amount of work is indirectly the cause of the paralysis, while the diseased liver, on the other hand, is the direct cause of the diseased kidney. The question may be asked, how is the liver the direct cause? From a pathological point, any derangement of the liver increases the labor of the kidneys. The kidney becomes inactive from this source, and then refuses to perform its work. Functions are lost for the time being, with the result that the blood becomes contaminated with urea, as every ailment would become a poison if renal elimination was not the safeguard of the body.

UREA.—As to why and how urea gets into the blood. It is known what the albuminous food contributes in digestion. Through a process of hydration by the action of ferments, are converted into peptones, which enter by absorption into the radicals of the portal vein, but an insignificant portion being absorbed by means of the lacteals; when once within the blood current, possibly in the process of absorption itself, the peptone must apparently be reconverted to the form of albumen, for the amount of peptone detected in the portal vein, even after an abundant albuminous diet, is too small to represent the amount of albuminous matter absorbed. We may, therefore, assert without fear of contradiction, that almost immediately upon entering the blood-current the albuminous food constituents are converted mainly into serum-albumen. It has further been stated that urea represents the final product in the series of decompositions which the albuminous bodies of the tissues undergo. The attempt to trace the changes, commencing with albumen, and terminating in the production of urea, is frustrated by the mysteries of the process. It is known that with the withdrawal of all food the excretion of urea decreases. It is further clear that urea is formed at the expense of the albuminous constituents of the tissues. That the excretion of urea may be increased by albuminous food, and the amount of urea eliminated increases proportionately with the increase in albumen administered as food. Urea is not, however, a simple product of oxidation of albuminous bodies, but is a product of complicated decompositions. An increase in muscular exercise leads to an increase in the elimination of urea, as the amount of kreatin formed by the muscles increases with exercise, and as the amount of urea eliminated by the kidneys increases under the same circumstances it would appear reasonable to assume that the kreatin resulting from the breaking down of the albuminous tissue constituents of muscles and nerves represent the main source of urea. The suppression of urine is followed by the accumulation in the system of a large amount of urea. Again, the urea under all circumstances in this disease becomes a constituent of the blood. Another source of urea may be found in the products of decomposition of albuminous matter in the intestine. The introduction of a large amount of proteid in the alimentary canal is followed by a corresponding increase in the amount of urea eliminated. An excess of proteid over and above that needed for nutrition in the alimentary canal breaks down under the influence of pancreatic digestion into leucin and tyrosin. If leucin be itself introduced into the intestinal tubes the amount of urea eliminated will be proportionately increased. Leucin, therefore, may represent a step in the process of conversion of albumen into urea. In the latter case we can probably locate the conversion of leucin into urea in the liver, for the liver, unlike other glands, normally contains large quantities of urea. We can assume, perhaps, that leucin is absorbed by the portal vein, hence the formation of urea out of leucin would be a natural conclusion.

This evidently shows the relation between the liver and the kidney in the disease of azoturia.

(*To be continued.*)

SANMETTO IN AZOTURIA.—I. W. Horton, M. D. C., of Providence, R. I., writing, says: "I used Sanmetto in a very severe case of azoturia. The horse had been down for forty-eight hours, and within three days I had him on his feet, and at the end of five days the horse was at work. In my opinion Sanmetto is a grand medicine for azoturia. I shall keep it on hand in my hospital."

[WRITTEN SPECIALLY FOR THE AMERICAN VETERINARY REVIEW.]

THE BOARD OF HEALTH AND TUBERCULOSIS.

BY A. S. HEATH, M. D., V. S., PROF. OF HYGIENE, BREEDING, AND ZOOTECHNY, AT THE AMERICAN VETERINARY COLLEGE, NEW YORK.

NO. II.

Dr. James Law, Professor of Veterinary Science in Cornell University, in Bulletin 65, for April, 1894, says: "Tuberculosis is so extensively prevalent and proves such a veritable scourge throughout the civilized world that no disease is so deserving of close and accurate study, or of the enforcement of effective measures for its suppression. Cholera, yellow fever and smallpox, which occasionally invade our territory, creating universal terror and dismay, claim but few victims as compared with this ever-present, universally-devastating plague."

This being the generally accepted view of the veterinary, or profession of *comparative medicine*, as well also of the profession of human medicine, the boards of health should be composed of both of these eminent men of education and practical experience, and should have an accepted right to formulate regulations under legal enactments for the protection of the health of man and domestic animals. And, although the ignorant may object to humane sanitary restraints, yet the public good demands such beneficent regulations enacted by wise legislators, under the special education of the health boards. It is, then, both wise and politic that these noble organizations should be respected, aided, and upheld by the people. And especially as these regulations are beneficial to the general public as well as to the producers of milk and meat.

Again I quote from Dr. Law: "In infected breeding and dairy herds in New York, consisting largely of mature cows, I have found a maximum of 98 per cent. and a minimum of 5 per cent. Again in healthy country districts I have found hundreds of cows in adjoining herds without a trace of tuberculosis among them."

In France the percentage of this disease was only one-half of one per cent. And in the Cotentin breed of Normandy, where no tuberculosis is found, our Minister of Agriculture of the United States refused to indicate to President Cleveland that these grand French cattle were free from tuberculosis. So that these cattle, hardy and hopeful helps to breed out the disease, are now excluded from importation. These large, hardy, healthy animals should be largely imported, free from duty, to grade up our healthy herds, so that dairy and meat products might be largely increased in quantity and quality of products of superior excellence, far surpassing those of our own herds. Thus, instead of keeping small, tuberculously-infected cows for meat and dairy products, we could secure grades two or even three times the size, yielding products relatively larger and better. For foundation stock, our healthy and hardy herds are eminently fitted to speedily increase the values of our dairy and beef herds. With our wise reciprocity regulations with our neighboring South American States, all of our surplus products would find a remunerative market, thus happily replenishing our too sadly depleted treasury, and supplying herds of superlative stock for the improvement of those of our neighbors.

The tuberculous bacilli seek by preference the lymphatic system, either in the lymphatic glands or in the loose connective tissues forming the lymphatic networks leading to these glands. Thus the breeds that have been inbred for profuse glandular functions, as milk-yielders, are those most susceptible to the lodgment of the infecting germs of tuberculosis. Many families of those having large milk glands and who are large milk yielders have suffered so extensively that their owners have lost the larger part of their herds, besides their loss of product and reputations. And many have had their entire herds destroyed by compulsory slaughter or dispersion. Yet many of these dairymen thus afflicted, resist every hopeful method of repairing or replenishing the herds by rational selection of healthy stock, or by breeding from animals free from disease or susceptibility to disease.

Infection and autoinfection, from the sputum or other infecting excretion, is a perpetual menace or danger from tuberculous subjects, either human or animal. But if all the infected sputum or excretions could be subjected to disinfection the disease could be speedily reduced to a possible minimum. Some investigators have found that a 3 per cent. solution of carbolic acid will destroy the bacilli in a day, when dissolved in a saturated solution of salicylic acid; or in a 1:1000 of mercuric chloride in ten minutes; or in thymol in three hours; or in a bright sunlight the germ dies in a few hours, or in ordinary daylight in a week. But when left in an ordinary stable it may live three months. Notwithstanding this knowledge, its liability to the miscarriage of the several methods is too uncertain a factor in eradicating the disease, as Koch ascertained that the bacillus retains its vitality and infecting power for nine or ten months in dried expectoration. It is, therefore, wise and justifiable in boards of health in establishing rigid regulations against tuberculous infection in both the human and animal subject. But further legislation will be necessary to make essential rules for stamping out the disease in dairies and breeding herds. Tuberculous milk infects the calves, pigs, dogs, cats and fowls, if not boiled before feeding. And if these hardy and hearty farm animals are thus infected through milk, how much more serious is the infection of delicate children and adults.

By breeding out the malady by larger, stronger, healthier stock, in the increased value of the better and more valuable grades, the destruction of the diseased stock is immediately compensated for in the enhanced value of the new herds. Not only by the importation of healthy animals, but by the judicious selection of breeding animals of all of the breeds free from disease, having stronger constitutions, and greater fitness for the special products bred for, our herds will soon be reared to a higher and more profitable standard.

The boards of health control the hygienic necessities of human habitations, and it is just as essential that milk and meat animals should come under the same sanitary regulations, for diseased milk and meat threaten the public health in as great a degree as bad sanitary conditions menace the households of man. Furthermore, sanitary conditions of the dairy, and meat animals and flocks exert a most salutary influence over incipient tuberculosis. And in view of the infinite diagnostic value of tuberculin, the imminence of human and animal infection is by this means happily removed to its remotest possibilities.

The hygienic possibilities of breeding are far beyond the apprehension of the ordinary stock raiser. Could the same wide principles be applied to human marital relations, the race of man could be regenerated. In breeding, it is possible to rear progeny far surpassing their parentage in all desirable respects. Pertinent to the subject, I quote from *The People's Farm and Stock Cyclopedia*, edited by the Hon. Norman J. Colman, and eleven *confrères*, even though from what I wrote nearly twenty years since.

" *Valuable Hints.*—Dr. A. S. Heath, President of the Farmers' Club of the American Institute, New York, has given some principles and facts of such great value that we reproduce some of them :

" The structures of animals are especially adapted to their demands, and *vice versa.* A special aptitude to fatten is incompatible with ample milk production in the race of bovines ; and excessive weight of body and shortness of limbs in the horse or hog is not suggestive of fleetness. Variation is observed in the readiness of animals to adapt themselves to new conditions, and the changes it produces in them, and especially by hereditary transmission to their offspring.

" Cold, exposure, and neglect produce degeneration, while care, shelter, and liberal feeding improve existing animals and their expectant offspring. These good results may also be freely transmitted to the progeny. Climate modifies both animals and plants. In tropical climates, with rich soil, many of our small grasses obtain gigantic growth ; and in great altitudes, with poor soil, both plants and animals are dwarfed. By judicious breeding, care, kindness, and liberal feeding, all the animals and their products become better. Milk is richer, meat is finer, beef and mutton more tender and juicy, the very soil becomes fat, and the tiller grows richer and richer. Generosity to man, beast, and soil is profitable.

"Breeding animals must be healthy, free from defects of form, free from defects of constitution, *free from predisposition to disease or weakness*, *free from ill temper or bad habits*, must have sound digestive organs, and they must be capable of promptly and perfectly assimilating food. The breeder must intimately know the capabilities and characteristics of his breeding animals, so as to be able to adapt them to rear young, which shall answer his preconceived wants. He must know that, all other things being equal, both parents equally exert the same amount of influence on their progeny. This presupposes the equal health, vigor, and stamina of both parents. Both should therefore be as pure-blooded and perfect as possible.

"Because it has been recommended that the male animal should be most highly bred, some have attributed to him the greater potential share in the procreation. This is only true because he is the parent of many annually, while the female is the parent of one, or of only a few, as in multiparous animals, during the same time.

"Though food, climate, soil, exposure, shelter, care, kindness, and some other operating circumstances, may all produce great changes, yet, all operating at the same time, and for a long period, on the animal and its progeny can not change the species. By selection, we, in time, breed small-boned into large-boned ones, long-legged ones into short-legged ones; we can breed horned into hornless, and light-bodied ones into heavy-bodied animals. In a word, by selection, the breeder can make the black white, the white black, the barren fruitful, the fruitful barren, the straight deformed, the deformed straight, the perfect imperfect, the imperfect perfect; he can breed to a color or to a feather; he can produce a tendency to meat, or to milk, or to butter, or to cheese, or to capability for labor, for speed, for endurance, or in fact, to serve almost any reasonable desire, demand, or fancy. By breeding from carefully selected parents, the breeder can rapidly increase his flocks and herds, by choosing those of great fecundity from which to breed—ewes from families that year twins or triplets, cows that uniformly breed, sows that farrow large numbers of pigs—and it is just as essential that the males, also, should be selected from like prolific families and dams far back through generations of excellence and fecundity."

To the layman, the marvelous possibilities of benign breeding, and the vast benefits conferred upon man and animals by the science of hygiene are almost inconceivably grand, humane and noble. With such a conception, the boards of health should not only be able to banish many of the infectious diseases of man and animals in their mutual relations to each other, but, also, to lengthen out the average periods of life of both man and animals, and thus increase the universal health and the goodly capabilities of human and animal productiveness. Wise laws are vital fortifications to protect longevity, love of life and happiness.

(*To be continued.*)

BARIUM CHLORIDE: ITS USE IN THE TREATMENT OF COLIC AND ACUTE INDIGESTION.

By John E. Brown, V. S., Oskaloosa, Ia.

[A Paper read before the Iowa State Veterinary Medical Association, Jan. 27, 1897.

Recently barium chloride has gained something of a reputation as a therapeutic agent in colic and acute indigestion. Several short articles have appeared in our veterinary journals on the subject, and, while some practitioners have reported highly satisfactory results from its use, for others its effects were uncertain, unsatisfactory and hazardous. It is only by a preponderance of evidence, for or against, that we will be able to decide as to its true value, and hence I add my testimony.

It is a drug very little used medicinally, though I find that in a few instances it has been recommended in scrofulous and nervous diseases in human practice, but its use has not been attended with much success.

Its special action in the animal body, particularly if introduced into the circulatory system, is in contracting involuntary muscular tissue; and being thus capable of producing powerful peristalsis, has exerted its beneficial effects in the diseases referred to in veterinary practice.

Experimenters found that two grains intravenously injected into a dog weighing thirty pounds, the pupil dilated, urine abundant, and death by arrest of respiration, with remarkable fibrillary muscular contraction, continuing after death.

Drs. Landers, Bruntin, and Hobart Han assert that it is a rapidly acting heart stimulant in small doses; increasing the force and volume of the blood thrown out by the systole.

By another it is claimed that barium chloride exerts an influence over the heart similar to digitalis. I have used the drug in something over twenty cases, and only when the heart action was very weak, and the strength of the animal far spent through the effect of the disease, have I been able to note any particular effect other than that of producing powerfully increased peristalsis; and this effect has in *every* case been very prompt. It is fully as energetic in its action on the bowel as eserine, and being devoid of the depressant action of the latter, on the heart, throws the preference greatly in its favor.

So far as toxicity of the drug is concerned, I think we have little to fear, if it is used in anything like the doses usually prescribed, and proper judgment exercised, as to the cases in which it should be used, and the manner of its administration.

On this subject the *Annual of The Universal Sciences*, issue of 1894, Vol. V, says: "Pellict and Malbec have studied the toxic properties of the salts of barium. Hypodermic injection of the chloride in doses of one-twelfth grain per pound of body weight, produced death in dogs in twenty-four hours after the administration of the drug."

The dose usually given intravenously to an average sized horse is about fifteen grains. Reckoning the weight of the average horse at 1200 pounds, this dose would only be equal to about one-eightieth grain per pound of body weight. If life continnes for 24 hours after a dose of one-twelfth grain per pound of body weight, surely we will not produce such rapidly fatal terminations as have been reported, by the administration of a dose which equals but one-eightieth of a grain per pound of body weight. In all the subjects on which I have used the drug, the effect has been universally the same, and all have recovered except three. One of the exceptions, a draft stallion, had been sick twelve hours or more, and was past the point where medical aid could possibly avail. I found him standing in a semi-conscious state, pulse imperceptible, eyes dull and inexpressive and lids half closed; peristalsis entirely absent, and cold sweat dripping from the body. The horse had suffered intensely all day, and regurgitation had been an almost constant symptom, until about an hour before I saw him. For the purpose of noting the action of the drug, if any would be produced in such a subject, I made an intravenous injection of fifteen grains of the salt, also a hypodermic injection of strychnia and nitro-glycerine, in an attempt to revive the action of the heart. Almost immediately peristalsis was set up and the horse began to strain violently in an effort to defecate. Neither fæces nor flatus passed, although the peristalsis and straining continued until death—about an hour later. The second exception was similar to the first; the only difference worthy of note was that I used the barium chloride without the nitro-glycerine. In a few seconds this case, which was standing when the injection was made, staggered and fell heavily to the ground, but after a few moments revived and stood up for an hour or so, showing no particular effect from the medicine. The third exception was a driving mare that had become a "chronic colicer," often having attacks of short duration while standing in the stable. On this occasion the mare had been out on a drive and came in sick. I was called soon after and found her in great pain and badly bloated. The tympanites was relieved by puncturing the colon, and after prescribing the usual treatment, I left. Calling again in about two hours, I found the case in about the same condition as when first seen. The trocar was again used and the mare removed to my hospital. An intravenous injection of fifteen grains of barium chloride was made soon after, which immediately produced audible peristalsis and straining, but no flatus passed, although the borborigma could plainly be heard for an hour or more. Every little while the abdomen would become excessively tympanitic and the use of the trocar made necessary. I had been using hyposulphite of soda very freely all the while and the gases began to generate more slowly, and then came a period of some hours of quiet. Again the case became uneasy—peristalsis entirely absent, and I made the second injection of the barium. This was about twenty-four hours after the first injection, and was followed by the same general symptoms—namely, audible peristalsis and straining, but unaccompanied by the passage of flatus. The case gradually grew worse, and died in about thirty-four hours after I first saw it. An autopsy revealed a torsion of the colon and a rupture of the stomach.

In all cases where the drug was used, its action was equally prompt and characteristic. Usually flatus passes in a few seconds after the injection is made, and relief is given almost immediately.

Unfortunately it is not in all cases that we meet with that this agent can be successfully employed, but those in which I believe it will be found of greatest value, are such as after the first violent symptoms have somewhat subsided, to reappear again. A cessation of peristalsis at this stage is almost always a notable condition. Up to this time the ordinary line of treatment has given satisfactory results, but now fails to give relief, and the practitioner is somewhat at a loss to know just how to proceed. The pulse is fairly strong,—tympanites slight, but the breathing is becoming accelerated and the patient more uneasy. Thus far my experience leads me to believe that barium chloride fits this place exactly and relief follows its administration almost immediately.

So long as nature keeps up a reasonable amount of peristalsis

I believe the barium is uncalled for and only increases the uneasiness and suffering for no particular good. Owing to the exceedingly energetic action of the drug on the bowel, I am sure its use would only be hazardous while tympanites is present to any great extent.

Always use the trocar and canula before making the injection if the abdomen is distended by gaseous formation. In administering the barium, dissolve a dose of the salts (say 15 grs.) in *not less* than one-half ounce of pure water, and make the injection with the solution at a temperature of 100 degrees F. The jugular vein may be easily raised by pressure upon it with the fingers of the left hand; the needle may then be introduced with the right. If the needle is properly introduced, blood will escape from the vein through it, and the injection may then be made without further trouble. My experience has also taught me to desist from the use of barium in all cases where there is regurgitation. Better take a little more time and overcome that condition by antiseptic treatment; then resort to the use of the barium if necessary, and the effect will be exceedingly gratifying.

ODONTOMES: REPORT OF THREE CASES.

By J. F. Pease, D.V.S., Quincy, Ill.

A Paper read before the Illinois State Veterinary Medical Association, Feb. 17, 1897.

In Vol. XV. of the American Veterinary Review occurs an article from the pen of Dr. W. L. Williams, upon the "Clinical Study of Odontomes." In this he quotes the classification of Dr. Sutton, which, at the time the above article was published, was the first of the kind to come to my notice.

With this able study by my worthy preceptor, Dr. Williams, before me, I shall describe three cases occurring in my practice, and, with some misgivings, attempt to classify them.

Cases I. and II. were undoubtedly fibrinous odontomes, but whether to consider them as aberrations of the follicle or of the papilla, I am undecided.

Case I. was a sorrel road-mare, aged 13 years, observed to have some difficulty about eating and showing tenderness to the bit. Quite a swelling was observed at the right cheek. Examination disclosed that the first lower molar, right side, was missing and quite a tumor appeared, surrounding and nearly hiding the second molar. The growth was fungiform and on closer examination was found to be pedicellate, and mostly covered by mucous membrane. Portions were torn off easily with the fingers, disclosing the second molar, which was pushed over toward the cheek, interfering with mastication. The tooth was extracted at once, but, being undecided as to the nature of the tumor, which was found to arise from the bottom of the alveolar cavity, we delayed further operation until having a cautery iron made, the counterpart of the tooth fang. I then proceeded to saw off the fungus with a stellate curette of my own devising, ending by thoroughly curetting the alveolar cavity to its apex.

In casting about for a safe escharotic to use in the mouth, I chose Monsel's powder (subsulphate of iron), and the cavity was filled with cotton thickly spread with this powder and strapped into the mouth. For two days afterward I found it necessary to curette a portion of the cavity, after which a mild wash of boric acid and glycerine was used to swab the mouth, and the mare made an uneventful recovery.

Case II. was that of an aged dun gelding, used for farm purposes. Had a large tumor surrounding the right upper canine tooth. The lips could not be closed on the right side and the incisors could hardly be brought together. The owner came for consultation and to strike a bargain for the treatment, the horse being of small market value; and that done he insisted on a delay of several days to finish some of his work. The horse was returned in five days, the tumor having grown perceptibly in the meantime. It was protruding from the mouth, and within filled the intermaxillary space, lapping over the bars of the palate nearly to the left molars. The horse received 10 drachms of chloral in pill form, half an hour before the operation, and I proceeded by attempting to extract the tooth. It snapped off below the surface of the tumor.

I then outlined the operation with the knife and with bone saw, tried to remove the outer plate formed by the pre-maxillary and superior maxillary bones, which were enormously bulged at the site of the tumor, but the saw struck the core of the tumor and would not cut it. However, the tumor was movable, and, after getting a start with the before-mentioned stellate curette, I inserted a finger beneath the hard core and enucleated the whole tumor, dissecting at the borders with the knife. The cavity was spherical and about three inches in diameter. The inside border of the tumor overlapped the hard palate, so that the tumor was fungiform and fully five inches across the top. As hæmorrhage was quite free, the cavity was packed with a large wad of cotton, dusted freely with iodoform and kept in position by a bandage passed alternately over the nose and over the upper incisors beneath the upper lip. The following day, I dissected the flesh from the buccal surface of the thin edge of bone, before mentioned, and cut off the edge of bone as low as practicable with the bone forceps. This allowed the flesh to roll in over the cut surface, greatly lessening the external disfigurement. Then, after thoroughly curetting with a sharp curette, removing considerable fibrinous material, similar to Case I. I used the same dressing and obtained an equally good recovery. When last seen, about two weeks after the operation, the cavity was nearly healed over and the deformity was diminishing.

The tumor removed weighed about 10 ounces, and upon inspection is seen to be both fibroid and dentoid. The hard nucleus would seem to place it in the class of "Radicular Odontomes," while the fibrinous masses arising from the bottom of the follicle would indicate its classification with the "Follicular Odontomes." Possibly, it would come under Dr. Sutton's fourth class, "Composite Odontomes," although not strictly an aberration of the whole tooth germ.

Case III. was the first in chronological order, and was not understood at the time. The writer was called out to a neighboring town to see a well-bred colt of one year or over, with an immense swelling of the right superior maxilla. The whole right zygomatic region was distorted beyond all resemblance to the equine species. I expected to find abscess of the sinuses, sequel to "strangles," so trephined at about the fourth molar. The bone was very thin and could be cut with the knife. Quite an escape of amber-colored fluid followed the incision, disclosing a jumbled-up mass of germinal molar teeth—permanent set,—roots of second and third premolars and large masses of radiately, striate, fibrinous or gelatinous material, similar to that in Cases I. and II., but softer. Passing the fingers into the mouth, the second and third teeth were easily extracted, and the fourth (first permanent molar) followed with more difficulty. There seemed to be no end to diseased tissue. After cutting away the thin pellicle of bone until there was an opening about two or three inches in diameter, the fibrinous material was removed and was found to have pressed down upon and checked the formation of the fangs of the fourth and fifth molars. The superior dental branch of the fifth nerve was completely denuded of its bony canal and the mass had pressed inward, closing entirely the right nostril and causing absorption of the turbinated bones. The owner, a physician, thought the growth must be cancerous, and I agreed to the destruction of the colt because there was so little left of him. I did not retain as much of this specimen as I should like to have, but what I have shows the condition of the teeth that had just formed.

I consider this to have been an immense follicular cyst of the fourth (possibly the third) molar tooth. Had it been taken in time, before so much pressure and atrophy had taken place, it could have been dissected out and the colt made a recovery with slight deformity.

TO CORRESPONDENTS.—THE REVIEW must again beg the indulgence of its collaborators, as a great many very welcome communications are crowded out this month. Our department of "Extracts from Exchanges" is reduced to a minimum in order to make room for the mass of original matter. The delayed ones will be published as rapidly as possible.

EXAMINATION FOR SOUNDNESS.

By Prof. H. D. Hanson, New York City.

A Paper read before the Veterinary Medical Association of New York County, March 3, 1897.

The subject of the examination for soundness is not a new one to you, but as it is very interesting, as well as important, I have selected it in order to try to excite discussion and bring out some of the important points that I have only touched upon, or have omitted. My paper is short, being only a rough outline of the subject, as time will not permit a lengthy discourse.

In my opinion, the subject of the examination for soundness, ought to be considered by veterinarians as follows: First, theoretical soundness; and, second, practical soundness.

Theoretical soundness rarely, if ever, exists, which should be remembered in making our examinations; this being the case, we, as veterinarians, have to be contented, and are compelled to make use of the term practical soundness, which should be defined to be that condition existing which is the nearest approach to a perfectly sound horse.

Before proceeding any further, it is well to understand the meaning of "soundness." In defining a sound horse, it becomes necessary to combine in a few words that which is difficult or almost impossible, as the extremes would consume many pages. Suffice it to say, that a sound horse is one that is free from all disease and has nothing about him that interferes, or is likely to interfere, with his usefulness, or depreciate his value as a sound horse.

Taking the above definition and the conditions really existing in practice, what do we find, and how are we to proceed? In the *first* place, we find that theoretical soundness rarely, if ever, exists; *second*, that practical soundness is what we have to deal with; *third*, that a horse must be free from all disease that renders him unable to do his kind of work as a sound horse should; *fourth*, that certain conditions may be present which in a shorter or longer time are likely to render him unfit to do the work as a sound horse ; *fifth*, that nothing must exist that tends to depreciate the value of the animal as compared to a sound horse ; *sixth*, that we, as veterinarians, ought to examine carefully and conscientiously, taking into consideration the class of horse (whether a smooth-limbed, well-bred animal, or whether a common-bred rough and big-boned animal), as well as the kind of work the horse will have to do ; *seventh*, that we, as veterinarians, have our reputations at stake ; *eighth*, that we must do our duty to the buyer, who employs us ; *ninth*, that we should not be prejudiced against the seller ; *tenth*, that acting fairly for ourselves, we do our duty to all concerned.

How are we to proceed to examine the animal?

We must bear in mind that a horse may be temporarily unsound and permanently unsound. Temporary unsoundness may include certain diseases, of which, after the animal has recovered, little or no trace remains ; it also includes certain forms of lameness, as interfering, slight sprains, etc., which subside in a short while. In our examinations we should look for disease, malformations, etc., and not for soundness.

The horse to be examined should be seen, *first*, at rest, in and out of the stall; *second*, in motion,both when warmed up and when cooled off (that is, examined in motion while hot and also when cold). While at rest, in the stall, we may ascertain how the animal feeds, if he cribs, sucks wind, weaves, his position of standing, etc. ; when backing out of the stall, the movements, whether there is dragging of the feet, or other peculiar actions. On the floor, have the animal naked (nothing on but a halter). Now take a general glance at the animal, noting the position of the extremities, the color, size and general outline. Then procced to examine part by part, commencing at the head and not forgetting to compare one side with the other as you go along. In examining the head, note the shape, the conditions of the bones of the face, the shape and condition of the eyes, the pupils, the ears, the mucous membranes of the nasal cavity (looking at the color, for ulceration, growths, etc.) ; then examine the contents of the mouth, the age, the shape, size and wearing surfaces of the teeth, and examine the bars for fractures; next pass to the intermaxillary space, feeling the pulse, the condition of the lower jaw, the glands in this region, then the pole, the throat, the condition of the glands, not forgetting to cause the animal to cough, remembering the kind of cough. Passing along the neck, the condition of the mane, the jugular groove, the trachea, the shoulders (for marks of setons, wasting of muscles); the elbows (for capped elbow); the knee for fractures, inflammation, etc.; the shinbones for splints; the tendons (for their condition); the fetlock, for fractures, swellings, scars of neurotomy, etc.; then look for sidebones, ringbones, etc.; now the general outline of the feet as regards size, shape, etc., and in particular for toe-cracks, quarter-cracks, the results of laminitis, navicular disease, etc.

Next the body comes under our observation, remembering to examine both sides; first the withers, looking for marks of setons, swellings, etc.; then the condition of the ribs, auscultate the heart and lungs, then pandiculate; look at the abdomen for hernia, etc.; the flank, noting the respirations, whether quickened, slow, irregular, and the like.

Next place yourself behind the animal, examining the hips for fractures, swellings, etc.; then the hip-joints (remembering to compare one side with the other); now examine the tail to see if false; look about the anus for tumors; the inguinal region, for hernia, tumors, etc.; the stifles, for swellings, dislocations; the hocks, for spavins, thoroughpins, and curbs; then pass downwards, noting the condition of the parts as in the anterior extremities. While here do not forget to take the temperature.

Now, have the animal trotted by the halter in as straight a line as possible, in a slow, easy trot, allowing the animal about one foot of rope, so as not to interfere with the action; the animal should be trotted from you, at which time you note the movements of the posterior extremities, and when trotted towards you the movements of the anterior extremities. It is also well to have the animal turned both ways, so as to see if any signs of string-halt exist.

When the animal is warmed up lameness may not be shown, while if cooled off it manifests itself, and *vice versa.*

Next have the animal galloped to test his wind; see if the breathing is fast, irregular or noisy. Then examine the eyes carefully with the aid of the ophthalmoscope. I have given you a rapid sketch of the examination, but there still remains another very important part, which is the writing of a certificate.

What ought a certificate contain?

It ought to contain the age, sex, height, condition of the mane and tail, and any special peculiarities or marks that may exist, the latter identifying one horse of the same color from another. If an animal be unsound, the cause may be mentioned in the certificate. The following is the usual form used and adopted by Prof. Liautard:

This is to certify that I have examined this day, at the request of Mr. ————————, *a chestnut gelding, six years old, fifteen and a half hands high, clipped mane, full tail, white star in forehead, low white stocking on near fore leg, high white stocking on off hind, and I find said animal to be lame on the near hind leg from a spavin, and therefore unsound* [*or have failed to find any unsoundness*].

REPORTS OF CASES.

OBSTINATE CASE OF IMPACTION OF SMALL INTESTINE.

By Robert W. Ellis, D.V.S., New York.

Was called, Oct. 19, at 1.40 A. M., to bay gelding about 15½ hands high, 20 years old (but in fine condition), used by the Trinity Corporation as a sort of general utility horse, about the cemetery grounds, and found said animal suffering with pain periodically, and on questioning attendants, learned that he had been in that condition all day and all night, up to the time of sending for medical assistance, as stated above; during which time there had been no movement of the bowels to the attendant's knowledge. I diagnosed the case as one of impaction of the small intestines, and, not wishing to attempt to move the bowels until the pain was controlled, I prescribed the following:

℞ Tr. opii,
" Jam. zingib.,
" belladonnæ.,
Ess. peppermint, āā ʒ iv.
Aquae, Oj.
M. Sig. Give half contents at one dose, and repeat in half an hour if requisite.

This I gave as prescribed, and it had the desired effect of producing sleep and quiet to the patient, only to be followed in about forty minutes by pain and restlessness. The second dose was given and such peace and quiet followed for the next forty minutes, that I went home, hoping to finish my night's sleep, and revisit the patient early in the morning, and proceed to produce a movement of the bowels; but no sooner had I retired than I was again aroused by the attendant, who stated that the horse was just as bad again, or if anything worse. I returned to the place and again administered the above as prescribed in two doses, half an hour intervening between the first and second dose. Again the animal seemed to be at ease, so at 6 A. M. I administered intraveneously

℞ Barium chloride, grs. xv.
Aquae dest., fl ʒ i.

This was followed by decided intestinal disturbance, and profuse diaphoresis, but no evacuation of fæcal matter whatsoever. After the action of the barium chloride had ceased, I had the blankets changed for dry ones and left the patient temporarily for breakfast. On returning at 9.30 A. M., I found the horse standing and evincing at intervals symptoms of abdominal pain, and, with the knowledge that the bowels had not moved for about forty hours, by this time I was apprehensive of enteritis, and with the experience just gone through with so active an agent as barium chloride, and so reliable a one in my experience, I determined not to again attempt to bring about perastalsis too suddenly, but gave

℞ Aloes Barbadensis, ʒ x.
Glycerin, q. s.
M. et fiat bolus No. 1.

At 2.30 P. M. (to relieve the pain that the animal might rest and thereby gain strength for the next attempt, which I knew necessarily *must* be made to evacuate the bowels, if the ball already given did not do so), I prescribed fluid extract cannabis indica, to be administered (undiluted) in drachm doses every half-hour until relief from the pain was accomplished, a condition which did not follow completely until after about ten hours of its use.

Thirty-four hours after administration of the ball, no action whatever having taken place, nor even a sound heard within the abdominal walls, notwithstanding the fact that the horse had received rectal injections (of which only a small percentage had returned at time of injection) and had been walked after being induced to drink water. At this time the horse began to droop and seemed somewhat uneasy again, and I determined to once more resort to violent measures while my patient was still alive, as I feared lest he might leave me suddenly; taking into consideration his age and the fact that he had neither eaten nor passed anything for three days, I administered hypodermically

℞ Physostigma salicylatis, grs. ii.
Pilocarpine muriatis, grs. iii.
Aquae dest., fl ʒ ii.
M. et fiat solutio hypodermica.

warning the attendant that we would have to witness some terrible distress, and assuring him that I would stay with him until it was over; but immediately after giving it, I was called away to a colic case, and returning in about thirty-five minutes I was told to mind where I stepped, and on looking observed that the place was deluged with the watery stools which were passing from the horse at short intervals, each time seeming as though flood-gates had been opened, and according to the attendant's statement, there was an evacuation after very violent rolling and groaning twenty minutes after administering the medicine. Each evacuation was of a very liquid consistency, heavily charged with whole oats. These evacuations continued for about two hours and a half, when they suddenly ceased and there was no movement of the bowels whatever for the next twenty-four hours, despite the fact that a quart of flaxseed tea was administered every two hours during the twenty-four hours following the cessation of the action of the eserin and pilocarpine, and, in fact, for the next four days. However, at the end of those twenty-four hours a passage of hard fæcal matter was accomplished, consisting almost entirely of whole oats (the horse's diet at this time being made up entirely of carrots and apples), another evacuation followed twelve hours later of the same consistency and heavily charged with whole oats, and after this about one scanty passage every eight hours for the next two or three days, all containing large quantities of oats, although the horse was subsisting entirely upon carrots, apples, and flaxseed tea, no oats having been offered and he persistently refusing bran and hay.

With the hope of stimulating the appetite so as to get him to partake of bran mashes and of toning the bowels so as to get a little more frequent passage, I prescribed the following:

℞ Tr. gentianæ,
" cinchonæ āā fl ℥ ii.
" nucis vomicae fl ʒ iv.
Spts vini rect. dil., fl ℥ xii.
M. Sig. Two fluid ounces every six hours.

This was continued for four days, with the desired effect, the horse eating at this time three and four quarts of bran in a mash, three times a day, besides considerable hay, grass, carrots and apples, and consequently defecation became more regular and often. But the interesting part of it to me and the circumstance that prompted me to report this case is, that up to the eleventh day, during which the horse had partaken of *absolutely no oats*, the stools continued to contain a large percentage of undigested oats. At this juncture I prescribed:

℞ Powd. gentianae rad.,
" anisi fruct.,
" fœnugrek, āā ℥ iii.
" arsenicum oxidum album, ʒ i.
M. Fiat charts. No. xii. Sig. One powder in bran mash morning and evening.

and instructed the attendant to feed the horse no oats until I had floated his molars, which I did two days later, finding them on examination very irregular and undoubtedly the predisposing cause of the attack.

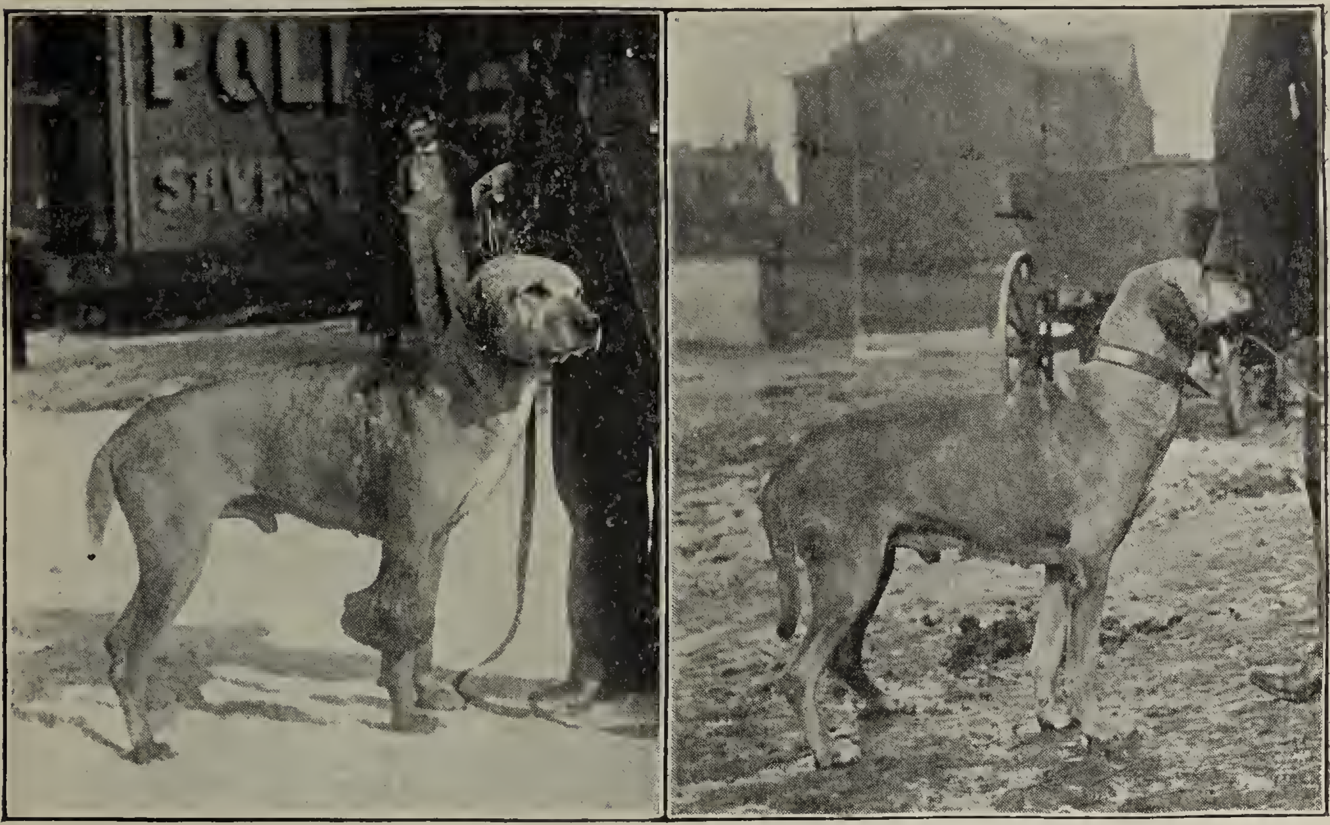
CYSTOMA DERMALIS.

By L. E. Willyoung, D.V.S., Buffalo, N. Y.

Subject.—Cross-bred mastiff and hound, aged three years. *History.*—Unobtainable in detail. Swelling present for over a year, opened repeatedly, always refilling again. Entered at hospital February 1, 1897. Examination revealed a soft pendulous mass, devoid of hair, with numerous old cicatrixes on surface. Mass measuring over 16 inches in circumference at its largest part with a base attachment on the posterior aspect of the ulna measuring 3½ inches.

On February 4 the dog was prepared for operation, a 5 per cent. solution of eucaine (methyl-ester) was injected, hypodermically, and the mass removed, after making an elliptical incision on each side of the mass, vessels ligated, and skin sutured with gut. Borated gauze and iodoform dressing applied.

Upon dissection of the cyst, it was found to contain 37 ounces of albuminous straw fluid, of alkaline reaction, interior of cyst having numerous distinct cavities, the walls of which



consisted of fibro-cellular tissue, with endothelial lining. Weight of entire mass, 3½ pounds. Fig. 1 represents the subject before operation. Fig. 2 represents it after operation, 14 days, cicatrization nearly completed.

Eucaine was found to be an admirable substitute for cocaine, as no after effects are noted through its use, similar to the latter, while it is cheap and efficacious.

TWO INTERESTING POST-MORTEM LESIONS.

By E. L. Volgenau, D.V.S., Inspector U. S. Bureau of Animal Industry, New York.

Aneurism of the Posterior Aorta.—The aneurism was situated in the thoracic cavity, between the seventh and ninth ribs, under the vertebræ. It presented the appearance of a tumor the size of a child's head, and was closely adherent to the chest wall. Owing to the pressure which the tumor exerted there had been complete absorption of the superior portion of the seventh, eighth and ninth ribs, which caused a deposit of bone cells upon the external surface of the tumor, making it so hard that it was with difficulty removed from its attachment. Upon cutting into the tumor the dilated aorta could be plainly distinguished, filled with coagulated blood. The balance of the tumor was divided by connective tissue septa, into pockets, each filled with coagulated blood, giving the tumor a multilocular appearance. The animal, a young steer, was in good condition, and from outward appearances did not seem to be suffering any inconvenience from the presence of the aneurism.

Tubercular Metritis. — The animal was suffering from chronic tuberculosis. There was enlargement of the broncho-œsophageal, posterior mediastinal, mesenteric and mammary lymphatics, with the presence of tubercles upon the diaphragm, the abdominal viscera and in the pelvic cavity. Slight presence of tubercles about the ovaries and external surface of the uterus. The ovaries had undergone fatty degeneration. Fallopian tubes slightly thickened. The uterus showed traces of chronic inflammation. Walls of the uterus and the cervix very much hypertrophied, with an offensive mucous discharge exuding from the cervix. The body of the uterus and both cornua were completely filled with caseous material, probably degenerated tubercular pus.

AMPUTATION OF THE TONGUE.

By W. J Martin, V.S., Kankakee, Ills.

Some time ago a farmer brought to my infirmary for treatment a black mare, aged about six years. She had been suffering for some time with poll-evil and fistula of the withers. On the road to town the mare had proven very refractory about leading, and the owner, to make her " keep up," had passed the tie-rope of the halter around the lower jaw, and over the tongue also. Upon arriving at my office, and removing the rope from the mare's mouth, it was discovered that the animal's tongue had been badly lacerated by the rope ; so much so, in fact, that amputation of the organ would be necessary. I removed with the ecraseur nearly five inches of the tongue.

The mare seemed to suffer no inconvenience from the loss of her tongue. This was the first time that I ever saw a horse with part of the tongue removed. I had always heard that horses whose tongues had been partly cut off could not drink without plunging the nose deep into the water, up nearly to the eyes, and, further, that they could not eat grain without wasting more or less of it ; and as a consequence they were hard to keep in good condition. This mare drank water in a perfectly natural manner, and could eat hay and grain apparently as well as if she had had none of her tongue removed. She took on flesh quite rapidly and after operation the poll-evil and fistula healed up permanently. From this it would appear that the tongue, or, at least, only a small portion of it, is essential for the well being of a horse's existence.

CANINE CONVULSIONS INDUCED BY EATING PLUM-STONES.

By L. E. WILLYOUNG, D.V.S., Buffalo, N. Y.

Subject.—Spaniel puppy, aged six months. Convulsions, due to intestinal irritation, persistent spasms, and periods of complete coma, approaching at intervals of four to five hours. Duration five days. *Treatment.*—Elixir bromide of potash and chloral hydrate, with but temporary success, followed by a hypodermic injection of $\frac{1}{20}$ gr. apomorphia. Through the emesis following three plum-stones were ejected. Partial abatement of convulsions. Two days later a two-grain hydrargyrum pill was administered, when in twenty-four hours three more stones were ejected per rectum, and a complete abatement of the symptoms followed. By subsequent history. found that the puppy had been fed canned plums a few days previous to the attacks.

EXTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

TETANUS TREATED BY "TETANUS ANTITOXIN" [*By Veterinarian Newsom*].—Developed without any apparent cause, the disease was observed with its ordinary manifestations and the animal placed under the usual treatment of quiet nursing, chloral hydrate, salines, etc. After a few days of no satisfactory results, the author decided to have recourse to antitoxin. One gramm of it dissolved in 10 c.c. of sterilized distilled water was given in two doses at two hours' intervals. At the time of the first injection, the temperature was 103.5°, the general symptoms were well marked, jaws fixed, head protruding and resting on the manger, nostrils dilated, hurried, irregular breathing, etc., etc. Two hours after improvement was noticed. The patient was quieter, spasms less severe, temperature down to 101.4°. The second injection was made. The improvement increased and continued in such a way that in four days the patient was convalescent. The sharp condition of the molars, which could be detected only after the recovery, were probably the cause through which inoculation may have taken place.—(*Vet. Journal.*)

MASTICATORY PARALYSIS IN A DOG [*By M. W. Pauer*, M.R.C.V.S.].—This affection, which is characterized by a dropping of the lower jaw and hanging out of the tongue with large quantities of saliva flowing from the mouth, brings at first the idea of dumb rabies. The author having seen a Gordon setter thus affected, watched him and found that the animal was gay, in good spirits, ate well, drank with some difficulty, but did drink ; his history failed to produce any evidence of having been bitten. He was placed under treatment. Strychnine twice a day (five drops of a 1 to 100 solution). Blisters on the masseter and temporal muscles. Later on electricity. Recovery occurred in about 25 days. It is also suggested to assist the support of the lower jaw by slipping a thin india-rubber ring over the nose and lower law when food or water is offered.—(*Vet. Record.*)

FRENCH REVIEW.

TREATMENT OF GANGRENOUS SWELLINGS BY INTRA-MUSCULAR INJECTIONS OF DISTILLED CRESYLED WATER [*By Mr. G. Viand*].—Gangrene following traumatisms are becoming more and more rare since the applications of antiseptic measures. The following cases illustrate this : 1. An army saddle mare was placed under treatment for a deep penetrating wound at the right elbow joint, with subcutaneous separation of the skin, measuring several centimeters. All around the wound there was a swelling, extending to the shoulder joint upwards, and down to the knee. The wound permitted the introduction of the little finger ; there was a slight oozing of serosity ; the swelling was soft and cold. The treatment consisted in injections of liquor of Van Swieten and sprays of iodoformed ether on the wound ; five subcutaneous injections of distilled cresyled water (2 drops of cresyl in 20 gramms of distilled water). The next day the swelling was arrested in its development. Two days later it had diminished little by little and then disappeared. The wound had a good aspect—the suppuration was healthy. 2. A horse was under treatment for a fistulous wound of the middle of the left shoulder. The whole shoulder and the arm were swollen, walking was almost impossible ; there was high fever. Treatment : free incision of the wound ; injections of liquor of Van Swieten ; frictions of ammoniacal liniment and intra-muscular injections of distilled cresyled water. In three days there was such a marked improvement that no more was required. According to the cases, the author suggests that the injections be made either subcutaneously or in the substance of the muscles. They are never followed by abscess nor indurations at the point of injection.—(*Revue Veterinaire.*)

VETERINARY LEGISLATION.

WISCONSIN.

A BILL TO REGULATE THE PRACTICE OF VETERINARY MEDICINE, SURGERY AND DENTISTRY.

The People of the State of Wisconsin, represented in Senate and Assembly, do Enact as follows :

SECTION 1. No person shall practice veterinary medicine, surgery and dentistry, or any branch thereof in this state, for compensation, or shall directly or indirectly ask or receive for his service as a practitioner of veterinary medicine or surgery any fee or reward, or shall assume the title of doctor, physician or surgeon by means of any abbreviation, or by the use of any word or words, letters of the alphabet of the English or any other language, or any device of whatsoever kind, printed, written or painted, or exhibited in any advertisement, circular, hand-bill, letter or other instruments, nor on any card, sign, door or place whatsoever ; nor shall he be a competent expert witness in any court in a matter pertaining to diseases of animals, except he be duly registered as hereafter provided in the office of the register of deeds of the county in which he resides.

SECTION 2. No person shall be entitled to register as such practitioner unless he be a graduate of a legally chartered school, college, or university of medicine and surgery, or shall have practiced veterinary medicine, surgery and dentistry in this state continuously for a period of not less than five years preceding the passage of this act ; or if he be not a graduate of a legally chartered school, college or university of medicine, surgery or dentistry, he must pass an examination before a board of examiners.

Should any candidate presenting himself for examination before said board fail to pass the same in a creditable manner in the judgment of said board, he may present an application to said board for another examination at any time within six months after his first examination.

SECTION 3. A board of examiners shall be appointed by the governor within thirty days after the passage of this act, to be known as the "State board of veterinary medical examiners," such board shall consist of three practicing veterinarians, who shall each be the holder of a diploma granted by a legally chartered school, college or university, who shall hold office, one for one year, one for two years, and one for three years after such appointment, or until their successors are appointed thereafter each year. The governor shall appoint one member of said board to fill the vacancy occasioned by the expiration of the term of office of those previously appointed, and is further authorized to fill such vacancies as may occur.

SECTION 4. All persons applying for an examination before the board of examiners under this act appointed, shall accompany each application with a fee of ten (10) dollars, which sum shall be used to defray the expenses of such board.

SECTION 5. The register of deeds of each county within this state shall record the name of each registrant under this act. The college, school or university granting his diploma, or the certificate granted by the board of examiners, and all those persons so registered shall be entitled to continue the practice of veterinary medicine, surgery and dentistry.

The fee of the register shall be one dollar in each case.

SECTION 6. Any person violating the provisions of this act shall be deemed guilty of a misdemeanor and upon conviction shall be punished by a fine of not less than twenty-five (25) dollars, or more than one-hundred and fifty (150) dollars, or by imprisonment in the county jail for a term of not less than thirty (30) days nor more than six (6) months.

All fines paid under this act shall be credited to the school fund.

SECTION 7. It shall be the duty of the district attorney of every county in this state to prosecute all persons violating the provisions of this act within his county. The method of procedure shall be the same as in all criminal actions.

SECTION 8. Nothing in this act shall be construed to prohibit gratuitous services in case of emergency, or to prohibit the services of an authorized practitioner of a neighboring state when called into requisition.

SECTION 9. This act shall take effect and be in force from and after its passage and publication.

NORTH CAROLINA.

A BILL TO BE ENTITLED "AN ACT TO ESTABLISH THE NORTH CAROLINA STATE VETERINARY MEDICAL ASSOCIATION," AND TO REGULATE THE PRACTICE OF VETERINARY MEDICINE AND SURGERY IN THE STATE OF NORTH CAROLINA.

The General Assembly of North Carolina do enact:

SECTION 1. The association of veterinary surgeons and physicians calling themselves "The North Carolina State Veterinary Medical Association" is hereby declared to be a body politic and corporate under the name and style of "The North Carolina State Veterinary Medical Association."

SEC. 2. In order to properly regulate the practice of veterinary medicine and surgery, there shall be appointed a board of examiners to be known as "The North Carolina Board of Veterinary Medical Examiners," which shall consist of five members, to be elected by the association.

SEC. 3. It shall be the duty of the said board to examine all applicants to practice veterinary medicine or surgery, and if on such examination, they be found competent to grant to each applicant a certificate, authorizing him to practice veterinary medicine or surgery, and no person shall practice veterinary medicine or surgery in this State, nor in any case administer, prescribe or operate for the cure of veterinary diseases, except as hereinafter provided, without having first procured a certificate from the said Board of Examiners. Any one practicing veterinary medicine or surgery except as allowed by this Act shall be deemed guilty of a misdemeanor, and shall be fined not less than $10, nor more than $50, or imprisoned in the county jail for not longer than 30 days, for each and every offense.

SEC. 4. Three members of said board shall constitute a quorum, and no certificate shall be granted except with a concurrence of a majority of the members present.

SEC. 5. The Board of Examiners shall elect a President and a Secretary, who shall also perform the duties of a Treasurer; they shall keep a regular record of their proceedings in a book to be kept for that purpose, which shall always be open for inspection, and shall always keep a record of all applicants for a certificate and of all who are granted a certificate and shall publish the names of the successful applicants at least once each year in two newspapers published in the state.

SEC. 6. To prevent delay and inconvenience, two members of the Board of Examiners may grant a temporary certificate to practice veterinary medicine or surgery, which shall be in force only until the next regular meeting of the Board of Examiners, but in no case shall such temporary certificate be granted to any person who has been an unsuccessful applicant for a certificate before the Board.

SEC. 7. The Board of Examiners shall meet at least once a year at such times and places as the association may decide upon, and remain in session sufficiently long to examine all who may make application at the appointed time.

SEC. 8. The Board of Veterinary Medical Examiners shall have authority to adopt such by-laws and regulations as may be necessary, and shall fill all vacancies in said board.

SEC. 9. The board shall have power to require each applicant to pay a fee of not more than $10.00 before issuing a certificate, and $5.00 before issuing a temporary certificate.

SEC. 10. The members of said board shall receive such compensation for their services, not to exceed $4.00 per day, and their travelling expenses, as the association may decide upon, to be paid by the secretary of the board out of any money coming into his hands as secretary.

SEC. 11. The said board shall have power to rescind any certificate that may have been granted by it, upon satisfactory proof that the person thus licensed, has been guilty of grossly immoral conduct.

SEC. 12. All persons who have been practicing veterinary medicine or surgery, exclusively as a profession, for five years previous to this act, shall be allowed to practice veterinary medicine or surgery in this State, provided that they make affidavit to the effect that they have practiced veterinary medicine or surgery, exclusively as a profession, for five years previous to the ratification of this Act, and have their names registered in the office of the clerk of the Superior Court of the county in which they reside, on or before January 1st, 1898, in a book that shall be kept for that purpose.

SEC. 13. Nothing in this Act shall be construed to prohibit any member of the medical profession from prescribing for domestic animals in cases of emergency and collecting a fee therefor, nor to prohibit gratuitous services in an emergency, nor to prevent any person from practicing veterinary medicine or surgery on any animal belonging to himself or herself.

And this Act shall not apply to commissioned veterinary surgeons in the United States army.

SEC. 14. This Act shall be in force from and after its ratification.

The above bill has passed the North Carolina Senate and its reading in the House. A bill asking for a State Veterinarian was killed, but its promoters are not disheartened.

NEW YORK.

BILLS INTRODUCED AFFECTING VETERINARY MEDICINE AND ALLIED INTERESTS.

IN THE SENATE.

No. 910. An Act to amend Chap. 570, Laws 1895, entitled "An Act for the incorporation of associations for the improvement of the breed of horses, and to regulate the same, and to establish a State racing commission," as amended by Chap. 380, Laws 1896. Read twice and sent to Committee on the Judiciary.

No. 929. An Act to amend Chap. 271, Laws 1896, entitled "An Act to regulate the practice of horse-shoeing in the cities of the State of New York having a population of 50,000 inhabitants or more." Assembly bill 1052, read twice and ordered printed, and when printed to be committed to Judiciary Committee—reported from said committee with amendments, committed to the committee of the whole and ordered reprinted.

No. 945. An Act to provide for the administration of the State Veterinary College, established by Chap. 153, Laws 1894. Read twice, and committed to Finance Committee.

No. 987. An Act to amend Chap. 448, Laws 1896, entitled "An Act for the prevention of cruelty to animals, and empowering certain societies for the prevention of cruelty to animals to do certain things. Read twice and committed to Judiciary Committee.

IN ASSEMBLY.

No. 1408. An Act to amend the public health law, in relation to the sale of domestic remedies.

No. 1443. An Act to amend the penal code, prohibiting the sale of horse flesh as an article of food. Read once and referred to Codes Committee.

No. 1495. An Act to promote the care and training of native horses and the improvement of farm horses, and for the incorporation of associations for the holding of horse exhibitions, harness and carriage exhibitions, horse shows, carriage and harness shows, and for the regulation of such exhibitions and shows. Read once and referred to Committee on General Laws.

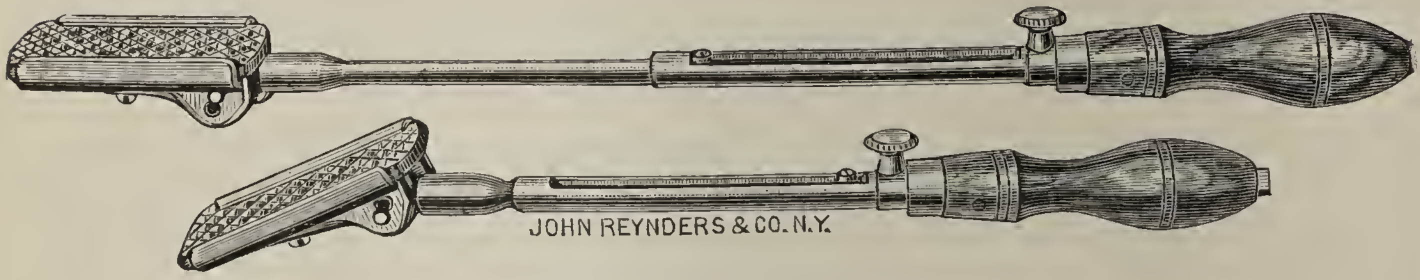
No. 1583. An Act to amend Chap. 570, Laws 1895, entitled "An Act for the incorporation of associations for the improvement of the breed of horses, and to regulate the same, and to establish a State racing commission," as amended by Chap. 380, Laws 1896. Read once and referred to Committee on General Laws.

No. 1610. An Act to amend sections 1081 and 1127 of the Code of Civil Procedure, relating to jury duty. Read once and referred to Codes Committee.

A NEW UNIVERSAL FLOAT.

We herewith call attention of our readers to a new ingenious float devised by Messrs. John Reynders & Co., of 303 Fourth Avenue, New York City.

The ordinary straight float is but an imperfect instrument, answering well enough for the back molars; thoroughness and convenience, though, require also a shorter angular float for front and intermediate molars. Thus the user had to have either two floats or one of the so-called combined floats, consisting of the usual long back molar float to unscrew and a short angular rasp or file-blade holder, screwing to the handle and stem part of the float.



PATENTED JANUARY 19TH, 1897.

In either case it made two or three separate pieces, either of which could be lost and the adjustment of which is not as convenient as with the new float we now picture.

The two illustrations show one tool in its more important ways of adjustment; the upper one as the usual long back and the lower one as the shorter angular front and intermediate molar float. The shank consists of two parts sliding one within the other, a set screw making it firm in such length as may be desirable.

When this float is in its compact adjustment (see lower figure) the end of the inner part of the shank protrudes as shown, a little beyond the handle for the purpose of affording a blunt screw-driver for the screw holding the rasp or file blade; in this shorter form the float is quite convenient for the pocket.

The solid part of the shank screws into a little screw-ended stem connected by swivel to the blade-holder and the swivel-slot in the latter affords adjustment straight with, or angular to, the shank by screwing or turning shank home to the perpendicular or to the angular surface on the projection back of the bladeholder.

Users of floats from this description will at once recognize the convenience of this new tool in offering in one piece, a universal float in any adjustment, equal if not superior to the separate floats or the several parts forming the so-called combined floats heretofore in use, an article of this kind, the several parts of which are together, thus providing against the inconvenience of loss of one part or another.

COLLEGE COMMENCEMENTS.

AMERICAN VETERINARY COLLEGE.

The twenty-second annual commencement exercises of this college were held in Chickering Hall, 18th Street and Fifth Avenue, New York City, on Thursday evening, March 25, and the hall was well filled by the friends of the graduates and the college. The exercises were opened with an overture by Lander's orchestra, after which prayer was offered by the Rev. Adolphus T. Sieker. Prof. W. J. Coates, Dean *pro tem.* recommended to the Board of Trustees the names of twenty-three gentlemen who had fulfilled the requirements of the faculty, whereupon Prof. Faneuil D. Weisse, President of the Trustees, conferred the diploma of the college upon the following graduates: George Bass Blackman, Murfreesboro, Tenn.; Harry Wentworth Bellman, Jr., Newark, N. J.; George De Witt Boice, Griggstown, N. J.; Horace Winfield Boyd, Lewistown, Mont.; Arthur Launy Grover, New Brunswick, N. J.; Bernard Gunther, Brooklyn, N. Y.; Howard Suydam Holdenby, Ridgewood, N.J.; James Grant Hope, M.D.C., Chicago, Ill.; Ralph Collyer Jenks, Sing Sing, N. Y.; John Victor Laddey, Arlington, N. J.; Otto Rudolph Leis, Newark, N. J.; James Edward Masterson, New York, N. Y.; John Phillip Messer, New York, N. Y.; John Joseph Murray, Nyack, N. Y.; Thomas John Ogle, New York, N. Y.; John Gregory Slee, New York, N. Y.; Harry Balthasar Shugar, Lebanon, Pa.; Thomas Francis Smith, Brooklyn, N. Y.; George Stevens, South Ryegate, Vt.; Franklin Smith, South Orange, N. J.; C. Chauncey Tietjens, San Francisco, Cal.; John Thomas, South Ryegate, Vt.: George Frederick Wescott, Portland, Me.

The prizes, distributed by Prof. Friedberg, were awarded as follows: Gold medal of the Board of Trustees, for the student passing the best general examination, to George Frederick Wescott, of Portland, Me.; prize of the Alumni Association, a set of standard veterinary works, for the second best general examination, to George Bass Blackman, of Murfreesboro, Tenn.; set of standard veterinary works, for third best general examination to John Gregory Slee, of New York City; Gold medal to the student passing the best practical examination before a committee of practitioners of New York and Brooklyn, to John Gregory Slee; a case of instruments for the best written and defended paper before the Veterinary Medical Association, to Arthur Launy Grover, New Brunswick, N. J.; a case of instruments for the best prepared anatomical specimen for the museum, to John Victor Laddey, of Arlington, N. J.; a free scholarship to the student of the class of '98 passing the best general examination was awarded to J. F. Devine, of New York City.

After more inspiring music, the valedictarian of the class, George B. Blackman, delivered a carefully prepared address, and then followed one of the most happy efforts that we have ever listened to, in the shape of an address to the graduates by the Rev. Lindsay Parker, D.D., of Brooklyn, who said that instead of delivering a sermon or making a set speech he intended to indulge in a go-as-you-please, and he went for about three-quarters of an hour to the delight of everybody, sending the audience from the hall in the happiest frame of mind.

Upon the stage were Prof. Faneuil D. Weisse, President of the Board of Trustees; Prof. W. J. Coates, Dean *pro tem.;* Hamilton Busby, Dr. Leroy Satterlee, and Dr. W. B. E. Miller, of the Trustees; Profs. J. L. Robertson, Roscoe R. Bell, J. E. Ryder, L. H. Friedberg, J. B. Stine, H. D. Hanson, Herbert Neher and G. G. Van Mater, of the Faculty; Dr. C. E. Clayton, President of the College Association; Dr. L. H. Howard, of Boston, President of the Alumni Association; Dr. W. Herbert Lowe, of New Jersey; Charles Burden, of New York City; Dr. George H. Berns, of Brooklyn, and Rev. Adolphus T. Sieker.

OBITUARY.

J. D. RUTHERFORD, M.D.,V.S.—On January 11th, this well-known veterinarian died suddenly from rheumatism of the heart. At the time of his death he was Dean of the Faculty of the Veterinary Department of the Detroit College of Medicine, having succeeded the late Dr. Brenton in that capacity. He was a man of many accomplishments, having graduated from the Ontario Veterinary College in 1887, from the Rush Medical College of Chicago, and was actively engaged in the study of law when the fatal malady overtook him. The Michigan State Veterinary Medical Association, of which he was an active member, passed appropriate resolutions of regret at his untimely death.

MICHAEL GALLAGHER, a registered non-graduate of Pittsburgh, died in February. . . . C. A. Turley, V.S., of Brandon, Manitoba, Ontario '95, died recently. . . . D. L. Lancaster, V.S., Shelbyville, Ind., died in February.

SOCIETY MEETINGS.

THE VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY was called to order March 3d at 8.30 P. M., at the Academy of Medicine, with the President, Dr. Huidekoper, in the chair.

On roll-call the following members responded: Drs. Amling, Bretherton, C. C. Cattanach, J. S. Cattanach, Delaney, Ellis, Huidekoper, Hanson, Loomes, Machan, Miller, Murphy, Neher, O'Shea, Robertson, Ryder and Winslow.

The minutes of the previous meeting were read and approved.

Reading of Papers.—Dr. Hanson then read a carefully prepared paper on "Examination of Horses for Soundness," which was fully discussed by the members present. Moved and seconded that a vote of thanks be tendered to Dr. Hanson for his paper. Carried.

Report of Judiciary Committee.—Dr. O'Shea (Chairman) reported progress. Moved and seconded that the report be accepted. Carried.

Publication Committee.—President Huidekoper reported progress for this committee. Moved and seconded that the report be accepted. Carried.

Application for Membership.—An application for honorary membership was submitted as follows:

> We hereby propose for honorary membership in the Veterinary Medical Association of New York County the name of Dr. W. Herbert Lowe, as a man whose every aim is for the advancement and elevation of the veterinary profession; taking a keen interest in veterinary and scientific associations in general, and an especial interest in this association.
>
> (Signed) ROBERT W. ELLIS,
> H. D. HANSON,
> J. E. RYDER.

Referred to the Board of Censors for report at next meeting.

Reports of Cases.—Dr. Neher reported a case of fatty infiltration of the heart in a dog.

New Business.—Addition to By-Laws, to be considered at next meeting, to wit: Moved and seconded that in the discussion of papers each member shall be entitled to one hearing only, not to exceed five minutes, and that he shall confine himself to the subject, and the essayist shall make one final reply, closing the discussion.

Moved and seconded that the meeting adjourn. Carried.

ROBERT W. ELLIS, D.V.S., *Secretary.*

ILLINOIS STATE VETERINARY MEDICAL ASSOCIATION.

The semi-annual meeting of this association was called to order at the Leland Hotel, Springfield, Ill., by the President, Dr. M. R. Trumbower, on Feb. 17th, at 10 A. M. On roll-call by the Secretary, the following members responded: Drs. A. G. Alverson, Albert Babb, A. H. Baker, L. Campbell, James Henderson, J. F. Pease, H. G. Pyle, E. L. Quitman, G. G. Ratz, C. E. Sayre, M. R. Trumbower, N. P. Whitmore and W. H. Welch.

The minutes of the previous meeting were read and approved.

On motion, the talk on "State Work," by Dr. M. R. Trumbower, was postponed till the afternoon.

Dr. J. F. Pease read his paper, "Study of Odontomes,"* which was very interesting and liberally discussed.

The society then listened to the very instructive essay of Dr. W. H. Welch on the subject "Milk Sickness."

On motion, the ensuing discussion was closed, and a vote of thanks was tendered the essayists for their productions.

On motion, a committee of three, consisting of Drs. Albert Babb, A. H. Baker and J. F. Pease, was appointed to go before the House Committee of Live Stock and Dairying, before which our Veterinary Bill is to come this afternoon. On motion, Drs. M. R. Trumbower and A. G. Alverson were added to the committee.

On motion the society adjourned till 4.30 P. M.

Society re-convened at the appointed hour and listened to the report of the committee, through its chairman, Dr. Albert Babb. The House Committee of Live Stock and Dairying postponed action on the Veterinary Bill for one week.

On motion, the rules were suspended for the time being and the following gentlemen were elected to membership by acclamation: Drs. G. G. Grundy (C.V.C., 1890), Morrisonville, Ill.; vouchers, Drs. Albert Babb and N. P. Whitmore; and E. J. List (C.V.C., 1892), Havana, Ill., vouchers, Drs. Albert Babb and M. R. Trumbower.

---

* Published elsewhere in this issue.

The President appointed a committee of three, consisting of Drs. Welch, Alverson and Quitman, to draft resolutions in regard to the death of Dr. J. W. Parkinson, late of El Paso, Ill. They made the following report:

WHEREAS, The all wise providence has seen fit to remove from our midst our professional brother and former co-laborer, J. W. Parkinson, late of El Paso, Ill., an enterprising and conscientious veterinarian, whose studious and gentlemanly qualities placed him in the front rank of our profession, be it hereby

Resolved, That we, the Illinois State Veterinary Medical Association, deeply deplore his loss to the association and profession at large, and sincerely sympathize with his family in their bereavement.

Resolved, That these resolutions be spread upon the minutes of this society and that a copy be forwarded to the family of the deceased.

W. H. WELCH,
A. G. ALVERSON,
E. L. QUITMAN.

Dr. Trumbower then gave the society a very entertaining and instructive discourse on "State Work."

On motion society adjourned to meet in Chicago, in November, at the call of the President.

ALBERT BABB, A.B., M.D.C., *Secretary.*

MASSACHUSETTS VETERINARY ASSOCIATION.

The regular monthly meeting of this association was held at 19 Boylston Place, Boston, on Wednesday evening, Jan. 27, 1897.

The President, Dr. John M. Parker, called the meeting to order at 8 P. M., and the following members were present: Drs. Beckett, Blackwood, Burr, Cronon, Frothingham, Howard, Lee, Lewis, Pierce, McLaughlin, Parker, Peters, Rogers, Winslow, Winchester, and Stickney.

Dr. McLaughlin reported the malformation of a tooth met with recently in practice.

Dr. Winchester reported a case where he had found adhesion of one testicle to the peritoneum.

Dr. Cronon reported the successful removal of a prolapsus uteri by ligature. Also had presented at clinic a dog with half a dozen twists of off forward leg.

Dr. Beckett reported a case of bastard strangles which made a good recovery.

Dr. Howard reported an interesting case of a pony that ran away and severed the jugular. When he saw it a clot had formed and it made a good recovery.

Meeting adjourned at 10.10 P. M. HENRY S. LEWIS, *Sec.*

MAINE VETERINARY MEDICAL ASSOCIATION.

A special meeting of this association was held at Hotel North, Augusta, February 15, 1897. Members present: Russell, Huntington, Purcell, Choate, Freeman, Salley, Farnum, Stevens, and Joly. Dr. Russell occupied the chair and Dr. Joly acted as secretary.

It was moved by Dr. Stevens, seconded by Dr. Freeman, that a committee of three be appointed to draw up resolutions to forward to the Cattle Commissioners of Massachusetts. Drs. Stevens, Freeman and Purcell were appointed on the committee, and produced the following resolutions:

WHEREAS, It is the belief of the members of the M. V. M. A. that in order to secure an honest inspection of cattle for the Massachusetts market the inspectors of such cattle should not be dependent upon the whim or caprice of the shipper; therefore

Resolved, That the Massachusetts Cattle Commission be requested to appoint Maine veterinarians to test cattle in their own locality for the shipment to the Massachusetts markets; and, further,

Resolved, That a uniform price for making such tests be established by the Massachusetts Cattle Commission.

The resolutions were adopted, and Dr. Huntington was chosen to present the same to the Massachusetts Cattle Commission.

The following resolution was also adopted.

Resolved, That it is the belief of the M. V. M. A. that the work of controlling and suppressing contagious diseases of domestic animals in Maine can be more economically and efficiently performed by the Maine Board of Agriculture than by the present Cattle Commission.

Meeting adjourned. W. L. WEST, *Secretary.*

MINNESOTA STATE VETERINARY MEDICAL ASSOCIATION.

On January 28, 1897, the veterinarians of Minnesota held a meeting at the Merchants' Hotel, St. Paul, with the object of organizing a State veterinary medical association. A number of the most prominent veterinarians of the State were present. Dr. N. S. Erb, of Faribault, was appointed chairman, and Dr. Rice, of St. Paul, secretary *pro tempore*. The chairman stated the object of the meeting, and after some discussion the Minnesota State Veterinary Medical Association was formed. A constitution and by-laws were adopted, and the following officers elected for the ensuing year: President, S. D. Brimhall, V. M. D., Minneapolis; First Vice-President, J. P. Anderson, V. S., Rochester;

Second Vice-President, A. Youngberg, V. M. D., Lake Park; Secretary, L. Hay, V. S., Faribault; Treasurer, K. J. McKenzie, V. S., Northfield. The President then appointed the following committees:

Infectious diseases.—Drs. M. H. Reynolds, Gould, Sr., and A. Youngberg. *Finances.*—Drs. J. P. Anderson, H. L. Eddy, and G. A. Dallimore. *Education.*—Drs. Adamson, S. H. Ward and Gould. *Legislation.*—Drs. C. C. Lyford, R. Price and N. S. Erb.

A regular meeting of this Association will be held at Owatanna in July, just previous to the meeting of the "Southern Minnesota Veterinary and Dental Association."

L. HAY, V. S., *Secretary.*

THREE NEW STATE VETERINARY MEDICAL ASSOCIATIONS.

The veterinarians of three more States have met and laid the foundation of associations for the furtherance of the cause of veterinary medicine by electing officers and performing the other details of organization. The following are the associations with the officers elected:

Tennessee Veterinary Medical Association.—Met in Nashville, Feb. 9, with a good attendance. President, J. W. Scheibler, D.V.S., Memphis; First Vice-President, Dr. Joseph M. Good, Chattanooga; Second Vice-President, Dr. H. D. Fenimore, Knoxville; Secretary, Dr. Joseph Plaskett, Nashville; Treasurer, Dr. T. W. Scott, Nashviile. Next meeting in Nashville, just prior to meeting of U.S.V.M.A.

North Carolina Veterinary Medical Association.—Met in Raleigh, Dec. 29, with following charter members: Drs. C. B. Ellis, Charlotte; T. B. Carroll, Wilmington; J. W. Petty, Greensboro; H. G. Bessent, Durham; W. C. McMackin, Raleigh; H. F. Bauer, Greensboro; H. B. Murray, Hickory; J. W. Rollins, Asheville; Daniel Quinlivan, Wilmington; Ashcroft, Monroe. Officers were elected as follows: President, C. B. Ellis; Vice-President, T. B. Carroll; Secretary and Treasurer, J. W. Petty.

Minnesota State Veterinary Medical Association.—Met in St. Paul, Jan. 28, with quite a number present. The following officers were chosen: President, Dr. S. D. Brimball, Minneapolis; First Vice-President, Dr. J. P. Anderson, Rochester; Second Vice-President, Dr. A. Youngberg, Lake Park; Secretary, L. Hay, Faribault; Treasurer, K. J. McKenzie, Northfield.

PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.

We have received the full report of the fifteenth annual meeting of this association, which was held in Philadelphia, March 2d and 3d, together with the many interesting papers presented, and we regret that its publication is delayed until May on account of the pregnancy of our pages. The officers elected for the ensuing year were: President, James B. Rayner; First Vice-President, M. E. Conard; Second Vice-President, J. C. Foelker; Third Vice-President, Geo. B. Jobson; Treasurer, John R. Hart; Recording Secretary, Jacob Helmer; Corresponding Secretary, W. L. Rhoads.

NEWS AND ITEMS.

THE GRADUATING EXERCISES of the Kansas City Veterinary College were held on March 31st, in the form of a banquet.

R. R. MORRISON, D. V. S., of White Plains, N. Y., sailed on the 24th ult., for Johannesburg, South Africa, whither he journeys upon a pleasure trip.

KANSAS CITY'S BENCH SHOW, to be held March 31st to April 2d, promises to be a grand success. A large number of valuable dogs have been enlisted.

DR. L. H. HOWARD, of Boston, was elected President of the Alumni Association of the American Veterinary College, at its meeting on commencement day. A deserved compliment to a loyal son.

THE WESTERN QUARANTINE DIVISION of the B. A. I. is being supplied with veterinarians to fill the positions of inspectors at the ports of entry on the Mexican border, offices conducted by laymen heretofore.

DR. F. F. SHANNON and Dr. H. B. Adair, inspectors in the Bureau of Animal Industry, have been transferred from the Meat-Inspection Division at Milwaukee, to the Quarantine Division, with headquarters at Kansas City.

CART-HORSE PARADE.—A movement is on foot in Providence, R. I., to establish an annual cart-horse parade patterned after the famous event of that character that has done so much for London owners of draft horses and the horses themselves.

VETERINARIAN GEO. H. BAILEY, of Portland, Me., was elected one of the vice-presidents of the International Horseman's Association, whose object is the protection of the interests of the breeders, owners, drivers, and trainers of the light harness horse, at its inaugural meeting in Chicago on March 9.

PROF. OLOF SCHWARZKOPF, who has been for a number of years engaged in educational work in Chicago and Minnesota, has moved to Flushing, L. I., having purchased the extensive practice and plant of Dr. Simmons, whose ill-health has caused his permanent retirement. While the West loses one of its brightest members, the East is to be congratulated upon its distinguished acquisition.

DR. HERBERT NEHER, of New York City, addressed the Farmers' Institute, under the direction of the New York State Experiment Station, at Rhinebeck, N. Y., on February 27th, on the subject of "Hygiene," a large audience being present. The Doctor is also a member of the New York Microscopical Society, which meets at No. 64 Madison Avenue, the first and third Fridays of each month. At its meeting on February 19th, Dr. Neher exhibited a specimen of adipose tissue.

DR. CHARLES GRESSWELL, who has occupied the position of State Veterinary Surgeon of Colorado for two terms, was reappointed for the third term by Governor Adams, with the confirmation of the Senate, on March 11th. It would appear by the records that the "spoils" system does not maintain with professional offices in that State, as Dr. Gresswell was first appointed in 1893 by Governor Waite (Populist), in 1895 by Governor McIntire (Republican), and now by Governor Adams (Democrat). Fitness should be the chief qualification in all scientific appointments.

AMERICA AHEAD OF ENGLAND IN VETERINARY APPRECIATION.—It seems almost incredible that the great city of London, with its five million human lives, and two million head of live stock of all kinds, should be without an official veterinarian upon its Board of Health, or in other authoritative position; but the *Veterinary Record*, in an article bewailing the lack of appreciation of the services of the trained veterinarian by the authorities throughout the United Kingdom, makes the statement which we have quoted from its editorial. At this rate of progress, the profession in America will soon outrank its English cousins by long odds. The standing of the profession on this side of the water in a sanitary sense is, considering our short life, and the obstructions we have encountered, really marvellous.

ROYAL VETERINARY COLLEGE.—The number of students on the roll of this college last year was 219. At the December examinations 81 students presented themselves, of whom 53 passed. During the last quarter 535 animals were sent to the college, of which number 274 horses, 45 dogs, and three cats were retained for treatment. At the out-patients free clinique 1,960 animals were treated, which included 1,139 horses, 20 donkeys, 622 dogs, 166 cats, seven goats, four birds, and two rats; 290 horses were brought for examination as to soundness, 158 of which passed as sound or serviceable. Viscera from 117 cases of disease were examined for veterinary surgeons or for members of the Royal Agricultural Society gratuitously—these cases included anthrax, tuberculosis, glanders, actinomycosis, rabies, sheep scab, fowl cholera, etc. Mallein for 502 horses was supplied gratis to veterinary surgeons.—(*London Times*, *Jan. 15.*)

A VETERINARIAN'S SUIT FOR SERVICES.—The County Court yesterday decided in favor of the defendant in the case of Dr. Albert W. Clement against Charles J. Hartman. The plaintiff, who is State Veterinarian, had paid a visit on a Sunday of last August to Mr. Hartman's stock farm, at Loch Raven, at Mr. Hartman's request, and had advised Mr. Hartman as to the condition of some of the horses and as to their treatment. Afterward Dr. Clement sued Mr. Hartman for his services and obtained a magistrate's judgment of $25.80, from which Mr. Hartman appealed. In his testimony Mr. Hartman said that he considered Dr. Clement's visit as one more of a social than a professional character, particularly as the Doctor had expressed an interest in one of Mr. Hartman's horses, which he had seen at a fair. Defendant's counsel also raised the point that as the alleged services had been rendered on Sunday, a claim based upon them was void.—(*Baltimore Sun*, *March 5.*)

NEW STATE VETERINARIAN FOR MONTANA.—Dr. M. E. Knowles, formerly State Veterinarian for Indiana and more recently in charge of the sanitation of the extensive horse-breeding farm of Marcus Daly in the Bitter Root Valley of Montana, has been appointed State Veterinarian of Montana and entered upon his work March 1. Stockmen of that State are to be congratulated on securing the official services of a man of Dr. Knowles' professional ability and executive capacity. He has made a record of intelligent and faithful service publicly and privately that ranks him among the most prominent men of his profession. Several unknown animal diseases in Montana invite his attention and his experience and success as an original investigator will be of value to him in this work. We understand that great numbers of sheep will be dipped in that State this year, chiefly for ticks, but in one county scab prevails to a large extent and Dr. Knowles will give personal and vigorous attention to the difficulty at once.—(*Breeders' Gazette*, *Mar. 3.*)

COULDN'T FOOL THE FARMERS.—In a long account of the meeting of the Farmers' Institute, at Hillsboro, Ohio, on Feb. 8, the *Hillsboro Gazette* makes the following comments on a paper read by a veterinary surgeon on a very important subject: "After music Dr. Gilbert gave a talk upon 'Milk Fever,' which satisfied the doctor even if it did not the audience. The substance of his paper was in harmony with his published article in the *Leesburg Buckeye* of some weeks ago, which the doctor copied from Fleming's 'Veterinary Obstetrics,' page 656, and failed to give credit for the same, and which he failed to have published in the AMERICAN VETERINARY REVIEW for March, 1896, page 823, simply from the reason that the matter was not new, and the doctor refused to reveal for the benefit of others the character of the remedy he claimed to have discovered. It is simply an insult to our intelligent and fair minded people to assume them so ignorant that he could take the careful production of another and palm it off as his own without discovery."

THE BONES OF RYSDYK'S HAMBLETONIAN.—It is proposed by John H. Wallace, the trotting horse authority, to dig up the bones of this famous progenitor of the American trotting horse, have them properly articulated, made into a perfect skeleton and placed in the Metropolitan Museum of Natural History, in New York, among Dr. Wortman's collection of fossil horses. Hambletonian died in 1876, and was buried on the highest point of his owner's farm in Chester, Orange County, New York, and it is thought that his bones may yet be perfect. There are many other instances of noted horses being preserved thus—Electioneer and Palo Alto are on exhibition at the late Governor Stanford's Palo Alto farm, in California; Geo. M. Patchen's bones are in the Smithsonian Institute at Washington; Hermit, the great English race-horse, was presented by his owner to the Royal Veterinary College, London. It is the intention of the Metropolitan Museum of Natural History to place on exhibition the skeleton of a modern representative thoroughbred race-horse, a high-class trotter, a draft-horse and a common scrub, with a view to showing the comparative quality of the bones of all.

THE SPIRIT OF PROGRESS IN IOWA.—A personal letter from State Veterinarian J. I. Gibson, of Iowa, has such a ring of the right kind of enthusiasm for progress in veterinary science that we take the liberty of printing the following extract: "The veterinarians of Iowa are determined to have recognition in law and to make progress in sanitation, even if we must push veterinarians into the legislature in order to get legislation. I am having a widespread call from the people of our State for the tuberculin test, and it seems too bad that we haven't money enough appropriated to carry on this work as fast as the people call for it. Ours is a genuine reform in sentiment, for we do not pay for diseased animals in Iowa, and have so taught our people. At Harlan, Shelby County, Iowa, Mr. Westrope, a famous shorthorn breeder, has taken an advanced stand in this matter, and will offer for sale none but tuberculin-tested bulls, and will buy none but those that have been tested and considered free from tuberculosis. Mr. Westrope had to sacrifice a number of good ones in order to occupy this position, and we as veterinarians look upon this as good for the breeding interests, as we believe our breeders will all come to this sooner or later. I am pleased to call your attention to this and may write you a short article in the near future."

The American Society for the Prevention of Cruelty to Animals (covering Greater New York) has published its report of work done during 1896. A brief summary is as follows: Cases prosecuted in the courts, 709; disabled animals temporarily suspended from labor, 3207; horses, mules, and other large animals, disabled past recovery, humanely destroyed, 3254; small animals homeless or disabled past recovery, humanely destroyed, 73,197; disabled horses and other large animals removed from the streets in ambulances, 583; cases investigated, 37,635. The recently established shelters (one in New York and one in Brooklyn) where the small animals gathered in about the cities, without having licenses attached, are proving very successful. An animal captured by their inspectors is taken to one of the shelters, whereat it is kept for 48 hours, when if not claimed by an owner, it is either sold for three dollars (which includes the license and the pound fees) or put to death. The record of their first year of operation is as follows: Number of dogs received at shelters, 27,587; number of dogs returned to owners, 3049; number of dogs placed in desirable homes, 654; number of cats received at shelter, 43,263; number of cats returned to owners, 7; number of cats placed in good homes, 163.

AMERICAN VETERINARY REVIEW.

MAY, 1897.

EDITORIAL.

TUBERCULINE AND MALLEINE.

Tuberculine and malleine have reached in Europe another important phase in their sphere of usefulness. They are no longer used as means of diagnosis only, but are now commonly employed in testing animals at the time of purchase, an excellent measure, especially with malleine, which is used by companies having large stocks of animals, and in which the purchase of live stock is in most cases of a large number of animals. In many of the companies they are used for public vehicles, omnibuses, tramways, cabs, etc., and all horses are malleined before their purchase is concluded—even in the presence of the fact that their use and their value are yet denied by some veterinary authorities.

Tuberculine is largely used on the continent, and every animal that reacts is destroyed. I had an opportunity a short time ago to see three specimens of lesions of a tuberculous nature accused by tuberculine, which were presented at the Société Centrale de Médecine Veterinaire by Prof. Nocard, which, unusual as they were, offered a great deal of interest. In one, a cow, that had numerous internal lesions, was presented on one of her fore fetlocks a large, hard swelling. What its nature was was an interesting question. On the leg, amputated at the knee, a longitudinal section was made down to the foot. The exudate which constituted the enlargement so distinct during life, was a mass of tuberculous degeneration,—which involved the os suffraginis entirely, a part of the second pastern, the sesarnoids and extended into the lower part of the metacarpal. The examination of the structure under the microscope revealed the presence of the bacillus of Koch.

A second specimen was no less interesting. A cow presented over the whole surface of the body a number of tumors—hard, varying in size from that of a nut to that of an egg. Tested with tuberculine, she reacted, and at the post-mortem no internal lesions could be found; yet the animal was evidently diseased. The cutaneous tumors which formed the only detectable lesions were all of a tuberculous nature. On section they would present all the characters of tuberculous degeneration in various degrees, in which the bacillus of the disease was also readily detected.

For the third case the animal also presented internal lesions of tuberculosis, and, besides, had at the base of the tongue a tumor the size of a hazel nut. This, however, was not of a tuberculous nature, but of actinomycosis. How fortunate it was that the lesions of tuberculosis had also been found, as, had they been of difficult recognition, as they are sometimes, the value of tuberculine for delicate diagnosis of tuberculosis would have been attacked by some unbelievers who undoubtedly would have said: "How can you believe that it is a reagent for tuberculosis, when it produces elevation of temperature also with actinomycosis?"

As to the question of the possible curability of glanders by malleine, the question seems yet a subject of great interest among veterinarians on the continent. A. L.

EASY URINARY ANALYSIS.—In the article on "Azoturia," by the late Dr. John R. Hart, published elsewhere in this issue, will be found a very condensed and comprehensive series of simple analyses to detect alterations in the composition of the renal secretion, especially useful for veterinarians in their everyday practice.

PRICKING A L'AMÉRICAINE.

To-day, though France is the birthplace of the veterinary profession of the world, it may be said that she is far behind other countries, even behind America, where the profession is only a few years old. Although the practice of veterinary medicine has had some attempts at legislation made in her favor, still empirics have yet a great deal of freedom in their practice of the healing art, and if some of our States protect American veterinary science, if they demand of foreign graduates evidences of their ability to treat animals, not by their representing themselves as a French graduate, a German thierarzt or an English veterinarian, nor even by the presentation of their diplomas, but ask of him an examination before a board of examiners, the same does not exist on this side of the Atlantic, at any rate, does not exist in France. There is, then, an opening for some of our empirics who, having failed in obtaining a new protective law, as asked of late in New York, or who may desire to practice without the annoyance of submitting themselves to legal regulations, it is a good opportunity for them; let them come here and qualify themselves as *American veterinarians.*

Farmer Miles, some years ago, came to Europe and introduced his operation for cryptorchids—but, if I am right, Farmer Miles did not assume any wrong title—he was a skillful operator—recognized as such all over the American continent, and it was his only claim. He had what he believed a valuable mode of operation—unique in his success—and desired to make it known; he did this for the benefit of the profession.

Farmer Miles is outdone to-day. An *American veterinarian* (?)—his name I am not sure of yet—is now traveling, I understand, all over Europe, and performing the operation of pricking by *his* method—an American (?) method, he claims--and he takes; he has success—great success.

His operation, I am informed, consists in two incisions, one on each side of the median line, close to the anus, of the skin and the inferior sacro-caudal muscle in its whole width, but not in its whole thickness; two stitches in the wound; the tail is kept down, not placed in pulleys ; the patient can work the next day,—and he carries his tail beautifully ? ? ?

I hope to be able one of these days days to send you the name of this great surgeon. A. L.

A VICIOUS BILL BEFORE THE NEW YORK SENATE.—We presumed that we had recorded the last attempt at pernicious veterinary legislation in the Empire State for this session at least when we printed the avalanche of bills in the March and April issues of the REVIEW. We were not unmindful of the fact that the REVIEW had, in its issue of last November, sounded a warning to the profession of the State, giving the first breath of a mooted attempt that was in contemplation to break our present law in the interests of the two-term colleges. As the session grew toward its close, and we had watched in vain for such a measure, we began to feel that we had been a false prophet, that the rumors we had heard in Buffalo were unfounded, or that the promoters of the attempt had become discouraged by the ill-success of every similar class of legislation before the present Legislature, and had abandoned the idea for the present. But our admirable Committee on Legislation of the State society, who are ever on the alert for any measures that savor of retrogression or that aim to nullify existing protective laws, discovered late in the session that Mr. Steiner had introduced in the Assembly (bill No. 2170) and Mr. Davis in the Senate (bill No. 1252) amendments to chapter 661 of the laws of 1893, which, if passed, would accomplish the results which we had been led to believe were to be aimed at. The committee at once took steps to promote their defeat, and through their efforts the profession poured forth such a volume of dissension to the Committees on Public Health as to effectually estop their progress in the Legislature. We received early information that they would be permitted to slumber in committee without any attempt at awakening until the session had ebbed away. The REVIEW especially wishes to extend its thanks, in behalf of the profession at large, to the physician-chairman of the Senate

Committee on Public Health, Dr. George W. Brush, of Kings County, for the prompt interest he has shown in the matter, his clear perception of the pernicious influences behind the measure, and to say to our *confrères* that in him they will always find a friend to the struggling cause of higher education in veterinary medicine.

ORIGINAL ARTICLES.

BOVINE TUBERCULOSIS IN ITS RELATIONS TO THE HUMAN FAMILY.

By George H. Bailey, D. V. S., State Veterinarian of Maine.

A Paper read before the Maine Academy of Medicine and Science, at Portland, Feb. 8.

(*Concluded from page 23.*)

It will be remembered that our vital statistics show that practically five-sevenths of our population are exempt from consumption. Far more important is it, however, that no nomadic, native or wild people living in the open air or tents, and more or less on the move, and no wild cattle, who have in no way come in contact with the so-called refinements of civilization have yet been found who were not exempt and free from tuberculosis.

The modern tendency of fashion among people of the most intelligence to carry out-door exercise to an extreme, is already showing its favorable effects in the less number of consumptives and magnificent physique of the children in that class of society. Ignorance and poverty have exactly the contrary effect, as shown by the terrible percentage of tuberculosis in that class, continually increasing in intensity, and being extended more profoundly over society by the custom of marriage, utterly regardless of the physical fitness of the contracting parties to produce anything as children but food for tubercle bacilli.

It has been said that Koch's discovery of the bacillus weakens the theory of heredity, but if it was heredity before, it is heredity now, and to my mind only proves that the disease is inseparable from the germ, and that where no germ exists, we can have no tuberculosis, and no tuberculosis without the germ.

While tuberculosis is not confined to any breed, nor is any breed positively exempt from it, my experience as cattle commissioner has led me to the belief that as far as Maine is concerned, it is largely an imported disease. The fact that so many high-bred and in-bred cattle have come into this State, and that so large a proportion and percentage of them proves to be diseased, has led me irresistibly to the conclusion that to them we largely owe the present condition of our milch herds, as recently disclosed through the aid of tuberculin tests, while the impressive fact remains that we have scarcely ever been called upon to condemn a native bred animal of the old-fashioned, rugged "red or brindle" type so familiar to us all; and when an owner writes me that he suspects his cow, and adds that she is a "foreigner," I am apt to think he has made out a *prima facie* case. It cannot be denied that the number of victims to tuberculosis increases with the improvement in, or specialization of our breeds of domestic animals, more and more in-bred for the production of beef or milk; that extreme specialization—that exaggerated activity of the vegetative life in the absence of proportionate muscular exertion, that once *acquired* is susceptible of being transmitted by way of heredity. Animals of a lymphatic or nervo-lymphatic temperament, attenuated figure, narrow chests, blondes, if you please, do they not remind one of hot-house plants, as compared with the vigor and hardiness of native "out of door" flowers and fruits of the same varieties, and may we not well take a lesson from the Seminole Indians who dwell in the Everglades of Florida and who punish with death any member of their tribe who marries any relative however distant?

The New York State Commission on tuberculosis in cattle say "The investigations of this commission have shown that tuberculosis is under certain conditions congenital; that its general diffusion is due to contagion, but that a small proportion is disseminated by hereditary transmission."

And the Brussels Congress of 1888 in summing up, says: "Tuberculosis has been observed in all warm-blooded animals submitted to domesticity or deprived of their liberty. The disease is contagious in man and animals and transmitted by heredity."

The Maine State Board of Health, in a concise and instructive circular, on the Contagious Diseases of Animals, says that tuberculosis or the "Pearl Disease" of cattle is essentially the same disease as human consumption. It is both contagious and hereditary, but contagion, in animals at least, is a greater factor in its propagation than heredity.

While agreeing entirely with the latter statement, it seems particularly unfortunate for those who deny heredity altogether, that so many of the human family die annually of phthisis whose history show their parents, one or both, died of the same disease. Ten years ago we had one of the most virulent outbreaks of tuberculosis ever known upon our State College farm at Orono. Its members, consisting largely of Jerseys, had been selected with great care and expense, from many sources, and the herd was increased by retaining the heifers and disposing of the male calves. Fifty-one animals (the entire herd) were condemned and destroyed, the autopsies proving in every instance the animals to be thoroughly diseased; even in calves a few weeks or a few months old, an unerring diagnosis could be rendered and confirmed. I found at Orono four generations of milch cows, a heifer, her dam, grand dam, and great grand-dam, standing side by side, all diseased, and were it not for an occasional tell-tale cough, and a typical temperature of about 103° (39.4 C.), apparently in perfect health, enough so that several cows in that herd had produced fourteen to fifteen pounds of butter within the week before the slaughter. Dr. Rich of Vermont, says "the form of tuberculosis most commonly met with in cattle is decidedly chronic, and might very properly be called *chronic disseminated tuberculosis.*" This fact causes incredulity on the part of owners and others regarding the existence of so dangerous disease in fine looking herds, and is doubtless due to the chronicity of the disease, as well as to the fact that the appetite and digestion continue good, even when the disease is far advanced.

If the morbific principle does not attack an organ essential to animal existence, the animals may render all the services of one which is in a good state of health: it may produce calves, furnish milk, perform labor, and even become fat. If the centre of infection is very limited, encysted, isolated, or calcified, the animal will enjoy relatively good health, and perform its functions as if perfectly well.

The human subject of tuberculosis on the contrary develops a capricious appetite and faulty digestion in a comparatively early stage of the disease, hence the more rapid emaciation and prominent objective symptoms in man. You may recollect that after the Orono herd had been disposed of, the question came up as to what disposition should be made of the bulls that had been sold from the herd and were then standing on farms scattered from the Penobscot to the Aroostook. In a letter received from the farm superintendent, he wrote me: "Within the past four years, fourteen bull calves have been sold from the farm, and eleven of them *came from the cows that we killed*, most of them being but a few days old when sold." Those who professed to disbelieve in the heredity of the disease claimed that these young bulls, being then two or three years old, having gone out from the herd so long before the slaughter, could not possibly be affected; while their environment among sound animals would be proof against contagion by inhalation, inoculation or ingestion.

Dr. Michenor, Chief Inspector of the Bureau of Animal Industry, at Washington, who was sent on to assist me in disposing of the herd, wrote me upon his return in regard to the first bull inspected:

G. H. Bailey, D. V. S.:

Dear Sir:—Your letter of 14th is rec'd. I do not see how any one can advise the keeping of said bull for service.

It must be remembered that tuberculosis is held to be hereditary by all the best authorities, both human and veterinary. If this be true, and I believe it to be so *unquestionably*, then this particular animal is certainly an unsafe sire, or to put it differently, is a sire almost *certain* to propagate the disease. *It should be killed.* With kindest regards to all, I am sincerely yours,
Ch. B. Michener.

He also wrote me on Nov. 19th:

> *My Dear Doctor*:—Your letter rec'd. I am glad you wrote me concerning this, as it gives me the opportunity to say that by chance I saw a portion of lung left at the Am. Vet. College, from the calf of one of the cows of the Orono herd. These lungs show unmistakable lesions of tuberculosis. Why don't you hunt up all such bulls and have them destroyed? There can be but *little* doubt that they will all sooner or later develop this disease, and will serve to extend it in many herds where their services are required. The Commissioners and the *State Veterinarian* more than all will be directly responsible for every case of such extension. In the eyes of all veterinarians you will deserve censure if you fail to follow up each animal. With regards to all, I am,
>
> Sincerely yours, CH B. MICHENER.

Upon investigation, *twelve* out of *fourteen* of those bulls proved by post-mortem examinations publicly made to be *thoroughly diseased.* The year following the slaughter, some cases of tuberculosis were reported upon a farm at West Lebanon, Me., and some very interesting cases were disclosed which have an important bearing upon the previous cases at Orono, and would seem to set forever at rest the wisdom of the investigating committee who reported:

"In relation to the cattle sold from the College farm, for several years past, we must certainly recommend a most careful examination of those animals, and *especially the bulls recently sold therefrom*, by a competent Board of Cattle Commissioners, to the end that every vestige of said disease, wherever found, may be stamped out and destroyed." The herd at Lebanon consisted of seven cows, four of which were the product of the Jersey bull "Butter Boy," purchased of the State College Farm. The first symptoms of these heifers had been nearly identical, and previous to calving no alarm had been felt about them, but soon after that event they commenced coughing until they all showed unmistakable evidence of the disease. The bull had already "gone wrong" and had been previously killed.

Upon a critical examination of these heifers, I found them all diseased, the autopsies verifying my diagnosis in every instance; while the significant fact remains, that these heifers *were all out of sound cows*, there have never been, previously or since, any other diseased bovines upon that farm.

I take the broad ground that every one of those bulls were "bred and born" tuberculous, and carried with them when they left Orono the seed of an abundant harvest, my position being rendered all the more impregnable by the cold fact that no case of tuberculosis had ever previously existed upon any of the farms where these bulls were owned, and that they begot diseased calves out of sound cows.

A remarkable case, proving the transmission of the disease from the male parent to progeny is published by Zippelius. "A stock breeder purchased a bull, and with him served ten of his cows. The bull was found to be affected with tuberculosis, and for this reason was killed. All the calves of the ten cows which had been put to this bull had eventually to be slaughtered because of this affection. The first symptoms of the disease in the calves were manifested when they passed to adult age."

According to Walley, "Hereditary tendency may be divided into direct and indirect: the former when it is transmitted by a sire or dam to its immediate progeny, the latter when only transmitted to the second or third generation—constituting atavism. No predisposing cause with which we are acquainted exercises such a potent influence in the production of tubercle as this; from sire to son, from dam to off-spring, from generation to generation—often an unbroken succession—the fatal tendency is transmitted; the more consanguinity is multiplied, the more the tendency is increased, and the greater the virulence of the resulting products. No animal whose history is tainted, even in the slightest degree, or in whose system there exists the least suspicion of tubercle, should be used for breeding purposes."

Williams says that "It is not only hereditary but congenital, and I have seen a calf three months old, which had thriven well until within two or three days of its death, filled with caseous, calcerous and gray tubercular tumors. In this calf the whole of the serous membranes were affected, which must have been formed *in utero.*" Adam relates an instance from among many others in which the lesions of the disease were observed in a calf which died a few hours after its birth, the mother at the time being affected with tuberculosis. Semmes, relates five cases of phthisis which he met with in fœtuses of cattle, and says these cases sufficiently prove that tuberculosis may be developed during the embryonic period, and that it is readily transmitted through heredity. Müller, slaughtered a calf derived from a cow affected with tuberculosis. At the autopsy, several nodules were found on the costal and pulmonary pleura, and the lymphatic glands (greatly increased in volume) had undergone caseous degeneration. Müller concluded from these facts that the disease is transmitted from mother to progeny, and that the latter from the moment of birth may possess not only the predisposition, but even present the patent lesions of the malady.

Fleming says that "animals *descended from tuberculous parents inherit a special predisposition to the disease.* As there is every reason to believe that the malady is hereditary, cattle having any tendency to it should not be bred from. In human medicine an analogous if not identical opinion has been entertained from the earliest times to the present day, and it is indeed astonishing that in the presence of this evidence the existence of a predisposition to, as well as the hereditary transmission of the malady should not have been accepted without discussion."

Dr. Blaine (M.D.), Assistant Physician to the Willard Asylum for the Insane, at Willard, New York, has recently contributed to the *Medical Record* a paper on bovine tuberculosis; its communication by ingestion, inhalation and hereditary transmission; also its dangers to the public health, in which he gives a full account of the sudden outbreak of tuberculosis, whereby the asylum sustained the loss of nearly two hundred head of valuable Holsteins.

Dr. Blaine says of the Holstein bull, "he had not manifested any cough, but was rapidly losing flesh and it was decided to kill him. The bronchial glands were greatly enlarged and on cross section were found calcified. There were many tubercles upon the peritoneum and bowels. Upon the glands penis were several small tubercles having the appearance of a soft chancre." It is not an unusual occurrence for animals well advanced in tuberculosis to abort. Many of the asylum calves were prematurely born, two of which required assistance at birth, as the mother was much exhausted. One of the two was removed at about the eighth month of gestation. This fœtus on examination was found saturated with tubercles, some of which were as large as peas, and on drawing a knife across them they were found calcified. Tubercles were found in the liver, bowels, diaphragm and chest-wall, there being none observed upon the lungs. The mother of the calf was killed some weeks afterward and was found highly tuberculous.

No. 2 was from a diseased mother, also at about the eighth month of gestation. On examination, I found the liver, diaphragm and bowels quite thickly studded, but the tubercles were much smaller than in the preceding case.

During the spring of 1885, a number of young heifers, which had been kept upon another portion of the farm, were with calf by the bull killed in June previously. It was deemed advisable to kill them. The calves of these heifers were all diseased, the *disease in one calf being traced directly to the bull*, as the mother was found unquestionably healthy.

Fleming says, "The influence of contagion on the propagation of tuberculosis has been affirmatively solved, for we have furnished ample proof of its hereditary transmission ; this transmission being nothing more than the infection of the ovum or fœtus through the medium of the parents."

If we demonstrate then, in any instances that heredity is operative in the case of any fœtus *in-utero* being found diseased, such clinical fact proves that infection must have been conveyed either by the ovum or the embryo (congenital, or uncongenital transmission.)

Dr. Theobald Smith says "the tubercle bacillus may pass in the semen of the male and infect the ovum directly.

2d. The ovum may be infected by disease of surrounding structures (peritoneum, ovaries, Fallopian tubes) in the female.

3d. The fœtus may be infected by the passage of tubercle bacilli from the maternal placenta into the fœtal circulation. The infection through the placenta is probably the most frequent cause of congenital tuberculosis. It may take place when, in consequence of generalized tuberculosis of the mother, tubercle bacilli are in the circulation and become lodged in the placenta, whence through some ruptured vessel, they may pass into the blood of the fœtus.

The bacteriological examination of the sperma is easier than that of the blood and often of greater importance ; and in patients showing no evidence of inherited tuberculosis, there has been found micro-organisms (cocci and bacilli) in the sperma of patients, whose blood frequently examined showed no microbic elements. Distinguished German pathologists assert:

The importance of differentiating between the finding of organisms in blood on one hand and spermatic fluid on the other must not be forgotten. The blood is not a culture medium, merely carrying micro-organisms with it which it meets in its circulation. The spermatic fluid, on the contrary, is an ideal and favorite habitat for micro-organisms of other chronic diseases besides tuberculosis.

The microbes circulate merely in the blood but live in the spermatic fluid. The presence of microbes in the blood means that somewhere in the body a focus of infection exists which sends microbes into the blood. The presence of microbes in the blood, however, may suffice to furnish an early diagnosis of tuberculosis before any noticeable clinical manifestations ensue. We can point out many cases early diagnosticated as tuberculosis through blood examination whose only symptoms were anæmia or disturbances of digestion, that proved to be tubercular afterward. The presence of microbes in the spermatic fluid, however, is of far greater importance, as it throws a new light upon the transfer of the microbe from father to child, not only in tuberculosis, but in syphilis, etc. Therefore to the author there is no doubt on this point, that an infected parent can inoculate the ovum at the time of fecundation.—[*Oest. Monatschrift. Thierhlk und Revue.*]

Is not this that mode of generation in which the germ is held to pre-exist in the parent, and its parts to be developed ? Is not the ovum a primordial and a typical cell, first in order, existing from the beginning; and when this cell has multiplied and developed and had breathed into it the "breath of life" and passed on to its inevitable result, will any gentleman say to me that it was the *predisposition* and not the *disease*, that was transmitted? If so, he must be gifted with more nervous, than mental perception.

Man is developed from an ovule, which differs in no respect from the ovules of other animals, and the embryo itself at a very early period can hardly be distinguished from that of the vertebrate kingdom. Living things alone give rise to living things; protoplasm alone can beget protoplasm; and all living things are composed of cells. Inasmuch as all vital phenomena are associated with protoplasm, it has been termed by Huxley, the "physical basis of life."

These cells are called the vital corner-stones of our bodies, but the lives of many of them are short; even the red blood cells die by being dissolved in the blood plasma; for the blood corpuscle lives only in the perpetual motion of the current; rest stamps it with the impress of death.

In breeding animals, it is not uncommon to find peculiar features of generations of ancestors, long since extinct, cropping up occasionally in individuals.

How these ancestral peculiarities can be transmitted through many generations, each individual of which originated from a single microscopic cell which has been fertilized by another cell, is one of the greatest mysteries of nature.

I am often told that the *predisposition* is the only part of the disease that is hereditary in the human family, that the mother cannot transmit the disease itself to the child *in utero*, but Jacobi of the New York Lying-in Hospital has reported a case of a child born at the end of the seventh month of pregnancy, of a mother who died of phthisis in the third week post-partem; the child lived a few minutes only and section showed miliary tubercules in some of the abdominal viscera and in the pulmonary pleura.

Dr. L. Emmett Holt, Professor of Diseases of Children in the New York Polyclinic, reports five cases of intra-uterine infection. Three of these were under two months old, one being but twenty days. The child who died on the twentieth day was born prematurely of a mother who was suffering from advanced tuberculosis. The child had cheesy bronchial glands, and miliary tubercles and small tuberculous nodules in the lungs. In one of the children dying at the age of seven weeks, cheesy nodules were found in the lungs and spleen. In the other dying at the same age, the mother had advanced tuberculosis, and died eleven days after the birth of the child. The autopsy showed an extensive tuberculosis pneumonia, with cheesy bronchial glands, and tuberculous deposits in the spleen, liver, intestines and mesenteric glands. Intra-uterine infection through the placental circulation has been demonstrated in the human race, by the cases of Birch-Hirschfeld Lehmann, Bar and Renon, and others. In Birch-Hirschfeld's case the organs of a fœtus taken from a woman dying from general tuberculosis were found to contain tubercle bacilli, and bacilli were also found in great numbers in the placental tufts. In Lehmann's case there was tubercular lesions in the placenta as well as in the child's organs. Bar and Renon made inoculations in guinea-pigs with the blood drawn in five different cases from the placental extremity of the umbilical vein, where women with advanced tuberculosis were delivered either of living or still-born children. The results of these injections were positive in two cases. Dr. Holt says " In most of the cases where children die of tuberculosis during the first two or three months of life I believe the probabilities to be strongly in favor of intra-uterine infection."

Waldeyer and Martin have shown proof positive that the bacillus is present in the greater circulation as seen in the localization of nodules in the liver, kidneys and testicles, therefore there can be no reason why they should not pass out of the maternal placenta.

Dr. Law in 1877 recognized the existence of tuberculosis in a large Jersey herd in New York. After all the animals had been killed, Dr. Burton informed him that he had destroyed every representative of a certain family in that herd. The same thing occurred in a recent slaughter of 36 out of 58 Jerseys and Ayrshires at Westbrook, all the offspring of the cows that proved to be diseased, reacted, while the calves out of the cows that proved sound, failed to react in every instance.

The law of heredity works just as actively now as it did in the days of Jacob, and that like will produce like under like conditions, is just true of the producers of milk and butter now as is was of producers of ring-streaked and speckled color in the time of the patriarchs.

Among the human family, as well as among the ox tribe, has Pharaoh's dream been constantly repeated, from the days of Joseph to the present day. The seven well-favored, fat-fleshed kine have been devoured over and over again by the seven ill-favored and lean-fleshed kine, which Dr. Peters says he has not the least doubt were suffering from tuberculosis. It is not even necessary to have the seven ill-favored kine to devour the seven healthy ones ; for if a single tuberculous cow be placed in a dark, badly ventilated stable with the seven well-favored ones, kept under unhealthy surroundings and forced to an enormous yield of milk, this single lean-fleshed individual will in time succeed in dooming all the herd. Notwithstanding the fact that the milk from the herd yields the desired 13 per cent. of total solids, yet there will be "death in the pot," or rather in the milk can—"consumption at six cents a quart" or cholera infantum at the same price, or perhaps a pleasant mixture of the two commodities combined.

Dairying is the principal industry in Denmark and the practice of Denmark is to test their herds with tuberculin and then, after the discovery of tuberculosis, instead of destroying them, those found tuberculous are preserved and isolated from the healthy cattle. The milk from the reacting animals is used. They found that by heating the milk from these reacting animals up to 165° or 170° makes just as good butter as milk that is not so heated and brings just as high a price in the market.

The calves from the reacting cows are removed at once from the premises in which they are born, they are given milk of healthy cows, or sterilized milk and in that way, it is claimed they cannot contract the disease *unless they are born with it.* The cows are retained in these dairies, and continue to give milk and produce calves until they develop tuberculosis in a more advanced form and are destroyed.

I do not anticipate any system will ever prevail in Maine where the milk that is not fit for calves will ever be prescribed for human beings. It is proper to state in this connection that Dr. Bang, the originator of the Danish system, does not believe in the heredity of tuberculosis.

It is very fortunate that horses seem to possess an immunity from tuberculosis, although the bond of union between them and mankind is very close and it has become to be a popular fad that a "white horse" is never present without a "red-headed girl" is sure to be in sight. While this may be only a coincidence and not contagious, I think we will all agree that it is certainly red-heditary.

In bovine tuberculosis, no therapeutics which considers the application of remedies as a means of cure, and no surgical interference which is intended to prolong the life of an animal affected is either indicated or practiced, but when you gentlemen have a case of phthisis, you keep your patient above ground just as long as possible; while with a tuberculous cow or bull, we get them under ground just as soon as possible; and the bullet is the "official order." Dr. Wedgewood's objection to such summary disposal of his clients (as I understand him) is that my treatment is "too heroic." I know it has been very recently decided "that you cannot crucify mankind" but he has other remedies at hand just as effective to put consumptive men under proper restraint and keep them from transmitting any further *predisposition* to their descendants. I believe that tuberculosis of the genital organs in man is not uncommon and that castration is a legitimate operation, and the only radical treatment to be recommended. The impotence following the operation should be no contra-indication, for in all reported cases, the extension of tuberculosis to the "seminal vesicles," impotence always occurs shortly as a sequel to this form of the disease.

Shakespeare has said, "Diseases desperate grown, by desperate appliances are relieved, or not at all." We cannot take our consumptive cows to "Poland Springs" summers, or to Florida or some alpine regions winters, for "their health," and if we did we should not send the bulls along with them to propagate that kind of stock. The real decrease of tuberculosis, and other ills that constitute the sad inheritance of humanity will come, when persons of phthisical type are sufficiently educated to realize that they ought not to marry. Your profession have a moral responsibility to perform that does not attach to mine, and I hope to live to see the day when you will possess a legal responsibility to forbid all such unholy alliances; and when the heart and hand of any fair and healthy woman is sought by some "consumptive dude," she may reply instead of "ask my papa," "ask my physician," when no reputable or conscientious practitioner would ever consign her to such a living Siberia as that. It is said that marriages are made in heaven, but if his Satanic majesty does not prove to be the grand promoter and boomer of such alliances, I shall lose all my faith in the good book which says, "the iniquities of the father shall be visited upon their children to the third and fourth generation."

Sir Thomas Watson, M. D., wrote a quarter of a century ago: "It would be well for the laity if the multiplication and diffusion of the strumous diathesis could be checked by a prudent avoidance of ill-sorted marriages. It is very desirable that correct notions on these subjects should be generally prevalent; and that persons who are conscious that scrofula in any of its shapes exists in their family and *a fortiori* they who know that it exists in their own corporal frame should avoid marriage, and the prudence might be enforced if they could be made to foresee the suffering and misery its neglect is calculated to inflict upon their offspring. But on these points our advice is seldom asked."

It was a well-recognized principle with the Greeks that men ought to select their wives with a view to the health and vigor of their children. In Sparta, also, a form of selection was followed, for it was enacted that all children should be examined shortly after birth; the well formed and vigorous being preserved, the others left to perish. The well-known case of the Prussian grenadiers is another example of methodical selection, for it is asserted that many tall men were reared in the villages inhabited by the grenadiers and their tall wives.

Statistics show that human phthisis and other tuberculous diseases, in which are grouped scrofula, tabes mesenterica, tuberculous meningitis and consumption of the bowels, have decreased since 1860, and we are beginning to realize the fact that this decrease in the mortality from phthisis points to the ameliorating influence of healthier and better ventilated homes; more wholesome feeding and a higher standard of domestic hygiene; general comfort and prosperity enjoyed especially by the industrial classes.

Edmund A. Parkes, the founder of modern hygiene, a man whose magnificent work has startled us by its simplicity and yet completeness, and who has contributed more to the saving of life than words can express, defines hygiene as the art of preserving health.

"It aims at rendering growth more perfect, decay less rapid, life more vigorous, death more remote: and tells us that if we had a perfect knowledge of the laws of life, and could practically apply this knowledge in a perfect system of hygienic rules, disease would be impossible." In dealing with this subject, we have to consider with regard to animals, the air they breathe, the water they drink, the food they are fed on, the exercise and labor they undergo, and the prevention and eradication of epizootic diseases. Our greatest hygienic triumphs have been won where our advice has been assisted by law. Up to a certain point a man is at liberty to do what he likes with his own property; the law, except in the case of certain diseases, cannot interfere, and we possess no power of enforcing hygiene; but the public has a right to demand that when they purchase what purports to be wholesome milk it shall not have mixed with it the germs of a deadly disease. The barns which many of our herds inhabit, damp and dark, with no proper drainage or ventilation, are a disgrace to civilized life, and if we could have camp-meetings in Maine to preach the "gospel of cleanliness" instead of faith-cures and hypnotism, the public health would be much better protected. The story of Moses leading the children of Israel out of Egypt, and solving the wonderful problem of restoring the national health of a diseased and degraded people, by compelling them to live for forty years in conformity to the highest sanitary laws, has never yet reached some of the back-towns of Maine. Governor Cleaves did not need the lantern of Diogenes to find me two honest and earnest men as Associate Commissioners, but that our work has in many instances been ignorantly opposed and interfered with, is not to be wondered. The property rights of the owner, the health of the consumer, the liability of the State for indemnity have all to be considered, but I regard it to be the first duty of all breeders and milkmen to eradicate tuberculosis from their herds, to save *themselves* and their *reputation*, as well as their customers and the public at large.

It has often been asserted and as often proved, that we have far less tuberculosis in Maine than in any other New England State, as reflected from our annual reports, but that we have far more than can be controlled by any appropriation yet made to carry on the work is very apparent. No other New England State has less than double the appropriation of Maine, while Massachusetts has $300,000 and paid out during 1896 over $173,000 for 5198 head of cattle condemned for tuberculosis. The present appropriation of Maine, would not last in Massachusetts the present week, and we have thoroughbred herds of cattle in this State, that would require the whole of the present amount to pay for, if they should all prove diseased. So insidious, widespread and fatal disease as this, should certainly command the earnest and thoughtful attention of the present Legislature, to enable us to grapple with and eradicate it from all infected herds. The discoveries of such eminent investigators as Pasteur and Koch has evolved from obscurity the essential cause of the disease, and has placed in our hands the means to diagnose the malady in all its stages of development, and its complete disposal has only to be intrusted to capable and conservative men to insure success. To Charles Darwin, the credit is due of having firmly established by an immense amount of evidence the scientific explanation of the most important factor in evolution; that every day fresh discoveries and experiments confirm the great principle of the adaptation of the individual to its external surroundings; and it has almost passed into the same phase as Newton's law of gravity, as a fundamental law accepted by all men of science as the basis of modern thought, to which all philosophies necessarily conform. [Irwell.] The commodious building in which we meet to-night has been evolved from its inorganic corner-stone, until even the blind have been made to see its fair proportions and enjoy its blessings. More than a century ago Ben Franklin "held the key" that has since unlocked the mysterious power of electricity that furnishes the matchless light by which I read, while the marvellous discovery of the "Röntgen rays" may possibly revert to some modest maiden, who first drew the shadow of her lover upon the garden wall.

In closing, I wish again to thank your committee for the assignment of this evening to address myself to a body of men who have been relieving the sufferings and prolonging the lives of their fellow-men ever since the time when the "shepherds tended their flocks by night," and that wondrous proclamation went forth "peace on earth, good will to all mankind."

MONTANA QUARANTINE LAWS.—Dr. M. E. Knowles has forwarded us a number of quarantine proclamations promulgated by the Governor of Montana, for which State the doctor has recently been appointed State Veterinarian. They embrace Texas fever, scab in sheep, bulls, calves and cows for breeding purposes, hog cholera, and swine plague.

AZOTURIA.

By John R. Hart, V.M.D.; Philadelphia, Pa.

A SYNOPSIS OF A PAPER READ IN 1883, WITH SUCH MODIFICATIONS AS CIRCUMSTANCES AND THE LAPSE OF TIME WOULD SEEM TO WARRANT.

(*Concluded from page 32.*)

Nerves.—As to the nerves. Complex causes which are capable of introducing alterations fall often upon the nerve elements and through them as an intermediary provoke reflex disturbances. Some manifest themselves in the diseased part or organ where the irritation of blood absorption and nutrition causes work to be done in an abnormal manner. Others reflect upon the whole economy; the heart and respiratory action is accelerated and the elaboration of material is found altered in all the cells of the body. Urea and carbonic acid are produced in much greater quantity. Nerve reaction has not only added certain peculiar features to local manifestations; it has bound the whole organism to the work which is going on in the diseased part. Besides, nerve reaction nearly always borrows the co-operation of another. Pathogenic process, every nerve excitation, cold, shock, emotional or traumatic, may produce alterations of some kind. These are not diseases. The real disease when it is roused by nerve reaction infers, except in cases where the stimulation is excessive, and those wherein the nervous system is abnormally excited, an essential deterioration of the organism. A disturbed nervous system induces disturbance of nutrition, perverted nutrition leads to the development of new substances, which may become toxic. There are often formed in the organism peptones which do not originate in the intestinal tube, but which are injurious in this sense, that escape by the urine, and thus bring about an abnormal spoliation of the organisms. There are thus produced abnormal albumens, which escape by the kidneys, and seem capable of destroying the nutrition of the renal epithelium and of introducing certain nephritis.

Disease also causes the appearance of abnormal coloring matter or of substances transformable into coloring matter, among which are found those that in urine take on a red coloration under the influence of perchloride of iron, as leucin, tyrosin, and all the imperfect excrementitious products which arise from insufficient elaboration on the part of the liver, and many other toxic substances.

BLADDER.—The bladder also plays an important part in this disease, as distention of the bladder starts sensory impulses, which are conducted to the spinal cord through the posterior roots of the third, fourth and fifth sacral nerves.

As soon as the bladder becomes distended the sphincter becomes mechanically dilated and the retained urine is apt to undergo ammoniacal fermentation. This evil you can remedy somewhat by the use of the catheter as often as you think necessary.

URINE.—Now, as to what may be discovered from the urine in conjunction with this disease.

According to chemistry, the great number of high or low-colored urines or any alteration in urine, are not original products, but result from decomposition of urea and uric acid and of the recomposition of these into new forms. The slightest disturbing influences seem capable of producing these changes. There is a wide difference between the physical character of sugar and that of oxalic acid, and between that of albumen and of uric acid, and yet they have so close a resemblance in their chemical composition as is generally sufficient in a single element. One of them should be sufficient to create another. Such attempts appear still more likely to be unsuccessful when it is considered that the morbid state of the urine is for the most part an effect rather than a cause of disease—the result either of inflammation or some structural lesion of the kidney or some constitutional trouble.

Still oftener the case is some derangement of the digestive function ; the primary assimilation of the food may be imperfect, and hence the whole function of nutrition becomes distorted.

Modes of detecting in ordinary practice the most important alteration of urine may not be misplaced here. A simple method, consists of the gravimeter for measuring the specific gravity of fluids, a little blue and red litmus paper, a test tube, a spirit lamp, and a vial of nitric acid.

The urine if acid will redden the blue litmus paper ; if alkaline, it will turn the red paper blue. If neutral it will produce no change in either color. If there is no cloud in the urine a small quantity of it may be placed in the test tube over a spirit lamp. Should a white deposit be formed it must be either albumen or the earthy phosphates. The addition of a drop of nitric acid will coagulate the albumen more firmly, but dissolve the salts. If the urine is very high colored it may be supposed to contain either coloring matter or bile or blood, or an excess of uric acid. If blood be present, heat will cause the liquid to lose its transparency, as will also nitric acid ; whereas heat will not affect the bile pigment, and nitric acid will at once turn it green. If uric acid be the cause of the dark color of the liquid examined, the addition of nitric acid will precipitate it in the form of a brownish sediment. Urine made green by the addition of nitric acid, contains the coloring matter of bile. Mucous in urine, if much, is generally owing to vesical catarrh or to enlargement of the prostate gland. Pus may be derived from the inflammation of the pelvis of the kidney, or from the lining membrane of any part of the urinary passage, or from abscess of the kidney or prostate gland.

MUSCLES.—The characteristics of muscles should be taken into consideration in this disease. In the first place, in a state of rest, living muscle has an alkaline reaction ; in dead muscles and in muscles in contraction, the reaction is acid, as well as acid potass., phosphate, and carbonic acid. Living muscle is to a certain extent translucent, extensible and elastic ; dead muscle is opaque, rigid, inextensible, and has lost its elasticity. This is due to coagulation of myosin. Why some animals remain lame and do not recover their normal condition of muscles in the posterior parts is due to a condition of fatigue, due either to insufficient supply of nutritive substance or to the accumulation of the products of decomposition, which produce a harmful action on the muscle fibres. When a muscle contracts its arterioles dilate, more blood passes through the muscle, and as a consequence the removal of the increased carbon dioxide formed is facilitated. For instance, when muscles are contracted those arising from one bone and inserted in another will in their contraction either move both bones toward each other, or if one be fixed will approach the movable to the fixed bone. I think in these cases of azoturia the psoas muscles and abductors are as much in fault as the crural muscles, as they have their insertion almost perpendicular to the bones on which they act. As you know, in the posterior part of the horse four angles are met with —the hip joint, the patella, hock, and pastern joint. The pelvis is very oblique relatively to the trunk in the horse, the femur is obliquely connected with the pelvis, downward motion of the pelvis, a backward motion of the femur from the body weight being prevented by the abdominal recti muscles, whose tendons, inserted in the pelvis, by their tension, tend to draw the hip joint anteriorly. The gluteal muscles arising from the ilium and passing over the hip joint to the femur, act in the same direction, not only preventing forcing backward of the hip joint, but in its contraction pressing the hip joint forward, so the leg is like the femur, flexed, its obliquity being limited by the tension of the tendons of the extensor muscles which pass over the anterior surface of the limb.

Often a rupture of fibres in the psoas muscles will prevent an animal from getting up on his feet, and frequently in this disease these muscle fibres are ruptured.

SKIN.—As to the skin and what assistance it gives in this disease in assisting nature to throw off the poisonous material. The skin may be regarded as an organ supplementary in its action to the lungs and kidneys, since the skin by its secretion is capable of removing a considerable quantity of water from the blood, small amounts of carbon dioxide, and small amounts of salts, and in certain instances, during suppression of renal secretion, a small amount of urea. The skin is thus an excretory organ, serving to remove gaseous, liquid and solid waste products. It is also influenced by the mental condition, by medicines, by poisons.

TREATMENT presents to the veterinarian two grand problems for his solution; first to discover its nature, and, second, to devise its cure. A knowledge, therefore, of the disease examined as well as those with which it may be confounded is essential.

Diagnosis lies before us as the basic principle of the practice of medicine. An intelligent conception of a disease is a prerequisite to the application of the medicines necessary to effect its removal and also to prevent confounding it with others whose resemblance to the particular disease makes it difficult to distinguish them. Its complications must be guarded against; its character, which subjects it to various accidental influences must be carefully considered and thoroughly known. The man who is equipped with such knowledge, with the principles applicable and with sound discretion and judgment enjoys immeasurable advantages over him who lacks them, or whose mind is so preoccupied by theory as to make intelligent treatment a difficult if not impossible task. The treatment in one stage may be of no avail in the other. This is plainly demonstrated by the consensus of opinion of the different veterinarians in their modes of treatment. Some bleed with success, while others condemn this practice; some purge in all cases, some in only a few. With a success that varies, some treatment may be in place and some most decidedly out of place. The per cent. of recoveries should demonstrate and guide us as to the proper mode of treatment.

There was a time when veterinarians carried a ball of aloes and calomel with them when called to a case that showed a disposition to constipation, with sluggish gait or stiffness in the limbs, as the owner put it. The ball was given with most excellent results, often requiring no other treatment. This was the time when one or two balls were given once or twice yearly. While it was an old rut in my mind, it was a good one that would perhaps be well to practice in this day of theory.

While some animals will recover under any and all circumstances in a great many diseases, as they seem to have immunity from death, as they have immunity at times from the effects of the wrong treatment, here is a treatment in azoturia, and the case is reported as having made a good recovery :

Aloes,	ʒ vii
Hyd. chlo. mit.,	ʒ i.

with tincture opii, to be given as often as necessary. To relax the bowels is the duty of one, while the other is to constipate. While it is known that tincture opii will increase the secretions of the skin, it will dry up all other secretions in the body, and will produce, if continued repeatedly, cerebral convulsions.

In regard to purgative medicines in this disease, I assure you that I have had a larger per cent. of recovery among animals that did not respond to the action of a cathartic than I had from those which responded promptly to the cathartic. It was my custom to give it to all the animals. This led me to consider well, and finally to discontinue their use, with much better results. As the fæcal matter had done all the harm it could possibly do at the time the animal was taken with the disease, our aim should be to get rid of the various poisons that the system is overloaded with.

Now as to treatment. The one point most to be observed in the treatment, not only of azoturia, but in all diseases, is to know the pathological condition of the animal when seen. It is important to know the stage the animal is in, as what would have the desired effect in the acute or inflammatory condition would not only be useless in the second stage, but would aggravate the disease, as perhaps is the case with bleeding. While a cathartic in one stage would be the proper remedy, in the next stage it might induce irritation that would kill the animal. The oil laxatives would be more beneficial. If they did no good they would do no harm, but would have a nutritive effect. The question may be asked why give oil for nutritive effect when it was too much feeding that assisted in the disease? The answer is that the very good living that assisted in causing the disease and in weakening the alimentary canal, that nourishment should be administered which would be quickly absorbed. Experiments show that large amounts of oils given to animals leave no trace after death, while a cathartic too often aggravates the irritation already existing and would remove from the blood water; they would dehydrate the blood and consequently the tissues. In some cases cathartics will answer, but I would consider aloes out of place in any congested condition of the bowels, as it would increase the irritation. The most useful medicine to use in a congested liver or kidney is calomel, as it stimulates the end of the secretory nerves in the cells as well as relieves the overloaded capillaries, and will diminish putrefaction and eliminate urea. It may be used in any inflammation, as it is eliminated by all secretions; or calomel with soda bicarb., and continue the soda bicarb. in tablespoonful doses every two or three hours in the drinking water. We of course know that the blood is alkaline, and that one of the poisons that is circulating in the blood in this disease is acid in excess. Any alteration from its natural constituent would cause a chemical change in the blood. Now to overcome this condition what is the next best thing to do? It is again to alter by a chemical change. We would here use soda bicarb., as it will eliminate from the blood uric acid. I would recommend small doses of the soda bicarb. in conjunction with the other treatment of diuretics, as too much medicine of an alkaline action may cause other chemical reactions, while the smaller doses would neutralize the acid in excess as well as assist digestion and absorption. The alkalies insure the gradual oxidation of the organic constituents of the fluids. They are also eliminated by the kidneys and are antacids.

The diuretics most needed are those that act more on the kidneys through the circulation, as by so doing you remove the uric acid and effete material that is circulating in the blood. Of this class I would recommend buchu, juniper, spirits of nitre; they are the sedative class, as they stimulate the ends of the vaso-constrictor nerves, in the vessel walls. If you have uræmic poisoning, the salts of potass. should not be used as a diuretic, as these salts determine intoxication, while the sodiums would be used with safety. Where there is much excitement, I have used in conjunction with diuretics fld. ext. hyoscyamus. It is soon eliminated by the urine, and it will also destroy the irritation that arises in the bladder. In these cases hyoscyamus acts as a hypnotic, and will assist in destroying fibrin, and acts very quickly on the nervous system as a sedative. Chloral hydrate is good in over-excitability or with a tendency to convulsions. Do not repeat too often. Chloroform inhaled will have the same effect in controlling the convulsions. Fld. ext. colchicum I have used with success in small doses, after the bowels respond, as colchicum is most useful in the over-fed or torpid condition of the portal circulation, or where we have constipation and deficient excretion of the liver. Colchicum will relieve by setting up an elimination process. It will also eliminate uric acid. Strychnine should not be used in paralysis of this kind. Its use is injurious in acute cases involving any alteration of the spinal cord, as it softens the spinal cord and causes the animal to die in convulsions. If you use it in early rigidity it is without avail. If too late, there is fatty degeneration of the muscles. It is good only when the paralyzed limbs are completely relaxed. Ergot is good in the late stages, where there is a tendency to congestion of the spinal cord or the meninges. I use mustard over the loins in all cases. I have never found slings of any use, as they seem to excite the animal. As it does not seem common sense to hang an animal in this disease to cure him I do not use them. With a good bed under him, I allow the animal to lie down and turn him from side to side every two or three hours. When the urine does not clear up in two or three days it is not favorable. If the urine does clear and is stringy, there is a possibility of albumen or some complication in the spinal cord.

If we would instruct our clients in a system of feeding their animals, and how to care for them while at rest, we would save ourselves considerable annoyance and trouble, as well as gain a reputation and a full confidence of our clients. They should be instructed in all matters pertaining to the stable, as I do not think there is one in our profession who is guilty of congratulating himself when called to attend an animal on the street suffering with azoturia. I have charge of a few large stables and cases of azoturia in them are rare. The animals are given frequently in their feed Glauber's salt, with a light diet twice weekly. All these animals are in good condition. I think Glauber's salt will prevent effete matter from collecting in the blood.

I think if some of our colleges would take an animal or two and allow them to stand for one or two weeks, as may be required, and feed to them the full complement of food at each meal ; then weigh the excretion, test the urine at intervals, then change the food as circumstances may require to find out what composition in food that is retained brings on this poisonous condition, compare the income with the outgo, the ingesta with the excreta, they would learn not only what part of the ingesta is retained in the body but would detect substances in the excreta not present in the food, and would learn all the changes which the body undergoes under the influence of the food.

It is possible, and would it not be wise to first discover what the muscles have lost of their nutritive elements, then increase this loss to the muscles by treatment identical with what is lost to give them tone.

At our next annual meeting, if not prevented by some unforeseen cause, I will endeavor to give a detailed account of the conditions of organs, and what is found, as well as the conditions of the blood and what is found, with such assistance as may be rendered by the Division of Bacteriology.

VETERINARY STATISTICS OF THE ENGLISH ARMY.—During the years 1895-1896 there were in the army 15,290 troop horses and 147 mules. The number of sick ones has been 7795, that of the dead 2.22 per cent. of the whole number. 5367 animals were treated for surgical diseases, 208 were sick with respiratory troubles, 258 had distemper. Not one case of glanders.

[WRITTEN SPECIALLY FOR THE AMERICAN VETERINARY REVIEW.]

THE BOARD OF HEALTH AND TUBERCULOSIS.

BY A. S. HEATH, M. D., V. S., PROF. OF HYGIENE, BREEDING, AND ZOOTECHNY AT THE AMERICAN VETERINARY COLLEGE, NEW YORK.

NO. III.

The bubonic plague has excited the deepest interest in the Boards of Health of New York, Brooklyn, and some other hygienic organizations. Dr. Wilson, bacteriologist of the Brooklyn Health Board, has succeeded in making cultures of the specific microbe. Dr. Doty, Health Officer of the port of New York, and Dr. Fitzpatrick, bacteriologist, have begun work at Swinburn Island. It is to be hoped that these gentlemen will substitute the goat for the horse in making the serum. The quantity is not so important as the quality of the serum, and the economy in production will be an item worthy of consideration.

In this, as in other infectious diseases, there are various animals, in domestication, which have been agents in the spread of contagion.

In Bombay rats are pests, not only from their great numbers and destructive habits, but from the danger they undoubtedly occasion in spreading the bubonic microbes from place to place from their persistent migratory habits. There can be no doubt of their active agency in the dissemination of infection, not only in the East, but all the world over. They rob us of our food, and by overrunning our storehouses, closets, granaries and pantries, they contaminate the food they do not devour. Cats and dogs, though they may themselves be immune to certain diseases, yet they are infected with tuberculosis, diphtheria, ophthalmia, and some other maladies that are the scourges of the human race. These household pets are more especially dangerous because of the sickening familiarity of soft-headed *zoophiles*, who eat and sleep with them, and, still worse, who disgustingly caress and fondle them. These animals are liable to convey to the masters or mistresses disease germs which do not affect themselves. They go from person to person, from house to house, from animal to animal in their social visitations. These two species of domestic animals have been known to spread measles, small-pox, diphtheria, scarlatina, and from the stable glanders, and from rats, tapeworms and vermin. Fowls are liable to transmit diphtheria ; and Nocard isolated a bacillus from a fatal infection to man from a parrot, which also infected other domestic animals. This parrot infection in France is said to have become fatally infectious both to animals and to mankind.

The hygienic moral of these suggestions plainly indicates that physicians should become more familiar with diseases of domestic animals, and those of fowls and house birds and pets. And especially as veterinarians do not come in such intimate relation to our family households. For this purpose of home protection, every physician should take a course in a veterinary college to become familiar with animal diseases. And veterinarians should in like manner take a course of instruction in human medicine. But, better still would be a union of both schools of human and comparative medicine, so that both M.D. and V.S. should be compulsory to both practitioners. If human practitioners need a more complete education, the better education of veterinarians is much more urgently demanded. This is not my first recommendation of this more extended plan of medical education. Four years since I offered a resolution to admit veterinarians to our medical societies. The resolution is laid on the table for further consideration at any time. I have often invited veterinary friends to accompany me to the meetings of county medical societies, and have always found them courteously treated by my professional brethren. When professional men of both branches, thus become mutually better educated, the Boards of Health will be composed of men better qualified to protect the public health. By this method infectious diseases will be better known, sooner diagnosed, and more promptly curtailed of their pathogenic tendencies to fatal inflictions upon both man and our domestic animals.

It is to be hoped that Tesla, or some one else, may so improve the X-rays that human localized tuberculosis may be cured by destroying the bacilli in the lungs or other organs and tissues of the system.

Humanity demands that our Indian wards should receive better protection from Sanitary Boards. The meat animals for their food is of the worst and most dangerous character. Many of the animals are poor, diseased and so imperfectly cooked when slaughtered, that the mortality among these tribes is fearfully and unnecessarily great, as compared with our more civilized communities. I have been credibly informed by a most worthy and honorable government inspector of Indian supplies, that he has been approached by wholesale grocers to permit bad supplies to be passed. Even three thousand dollars were offered to try to corrupt this noble Christian gentleman. No blame can be attached to our general Government. How nobly has it responded to our fellow countrymen who have so recently and so severely suffered from floods in the West.

Dr. Daniel Lewis, President of the State Board of Health, said in a paper recently read before the Society of Medical Jurisprudence: "It is but a single step from the treatment of disease to the even more important field of its prevention, and preventive medicine is destined to become the noblest achievement of the medical profession of the twentieth century."

Dr. Lewis and his worthy confrères are doing a noble work in the promotion of State and city sanitation, but until both branches of the medical profession join hands with the legal profession and earnestly and wisely enter into local and State politics, we can never secure adequate laws by which the means for protection of the public health shall be secured. If the great State of New York should appropriate half a million of dollars annually until the infectious diseases within its borders were so far extinct as to render a fifth, or less, of the amount adequate for protection from all sources, internal and external, the increased earning capacity of its people would make the tax a small one so far as raising revenue for sanitation is concerned.

CANNABIS INDICA—CANNABIS AMERICANA.

By Charles Williams, V. M. D., Philadelphia, Pa.

A Paper read before the Pennsylvania State Veterinary Medical Association, March 3, 1897.

The U. S. Pharmacopœia recognizes the dried tops of the *cannabis sativa*, or common hemp plant, as it grows in India and in our own country. The fluid extract of this plant is a dark green resinous liquid of a peculiar narcotic odor and taste. *Gunjah* is the dried plant as sold in the bazaars of Calcutta. *Churrus* is the resinous exudate with the epidermis, etc., scraped off the leaves. *Hashish* is an Arabian preparation of the drug. The resinous principle representing the active ingredient of the drug is known as *Cannabis*. It also contains a trace of volatile oil.

Physiological Actions.—Indian hemp is a deliriant narcotic, anodyne and antispasmodic. *Bhang* is said by Finlay Dun to be widely used in India to stay the flagging spirits, and larger doses to produce pleasing dreamy narcosis. Similar effects are said by the same author to be produced in horses, the flagging appetite is improved, capacity for exertion increased and restlessness overcome. Sir Robert Christian stated that "for energy, certainty and convenience, Indian hemp is the next anodyne to opium and often equals it." Mr. Richard Rutherford, of Edinborough (says Finlay Dun), has used gunjah for several years for colic in horses, and finds that it acts as promptly and without any of the headache, delirium or blocking of the bowels as opium is almost sure to do. Horses receiving full doses soon become drowsy, hang the head, finally relax the ears, close the eyes, nod the head and sway from side to side. If the drug is continued they lie down, stretch out at full length and certainly evince every symptom of dreaming, for they will work the lips, wink the eyes and work the limbs as one often sees a dog do when dreaming by the fire, but I never remember their making any vocal noise. The effects pass off in half an hour to an hour, when the animal rises and usually begins feeding without any other consequent symptoms.

Cannabis in Colic.—Here is where I wish to speak of the drug as of the greatest use to the veterinarian. I consider this drug the anodyne *par excellence* in all our animals, for, as Finlay Dun says, it gives no deleterious after results and an animal with a simple case of abdominal pain may work again in a few hours when relieved. In treating a case of colic I find about two drachms of the fluid extract poured on the tongue and repeated every fifteen to twenty minutes is about right; some use less and others use more. I believe there is no danger in larger doses, but I think equally good results are derived from oft-repeated small doses; anyhow, you will save expense and relieve the animal about as quickly. If the animal's circulation is good, so that absorption takes place readily, and the extract is made by a reliable chemist, the animal should be under the influence in about thirty to forty minutes, and either lie down or doze off standing up, and only one-half an ounce to one ounce of extract used. There are once and again cases when it will take four ounces, but I can assure you, gentlemen, when it takes four ounces of a good preparation of this drug or more, things will begin to look serious, and the vigilant practitioner will perceive long before he has gotten to this stage that there are other things required besides a simple anodyne, for all we claim of this drug is to make the animal comfortable till nature can remove the offending element without interfering with the action of the bowels. Of course I do not wish to be understood to recommend this drug as a panacea for all colics without any other treatment, as some do for their favorites (barium chloride, for instance), but when we get excessive flatus we need something to check fermentation and the trocar to relieve pressure, and when we get a congestive colic we need the fleam with mustard to the sides and cannabis by the mouth, and so on. But I will repeat, when a simple narcotic and anodyne is required cannabis indica is the drug *par excellence*, and I think if any of you have never tried it, it will give you much satisfaction.

REPORTS OF CASES.

PARASITIC BRONCHITIS.*

By SIDNEY D. MEYERS, V.S., Wilmington, Ohio.

During the afternoon of Jan. 10, 1897, my advice was sought by a Mr. C. regarding some yearling calves which he owned. He stated that about September they commenced to run down in flesh, and that out of a bunch of sixteen, six had already died, while two more were down and could not get up. He also said that his lambs, which had been running in the same field, were dying off. I at once suspected parasitic trouble, and being unable to go to his place that afternoon I informed him that I would call the next day and kill one of the calves that was down, and hold an autopsy. When I arrived next day the owner directed his men to tie a rope to the calf's leg and drag it out of the barn. I beheld a pitiful sight, the calf, greatly emaciated and besmeared with excrement, was too weak to raise its head. After killing the animal and opening the thoracic and abdominal cavities, my attention was first attracted to the lungs by what appeared to be several hepatized islands. I removed the lungs from their cavity and proceeded to examine them.

The trachea contained a quantity of frothy mucous, the bronchi and bronchial tubes were partially filled with a purulent viscous exudate, in which I found numerous strongyli. Besides these lesions, centres of lobular pneumonia were also observed, which was produced by an extension of inflammation to the pulmonary tissue, and which accounts for the hepatized islands observed on the external surface.

I then examined the other organs, all of which were anæmic. The contents of the bowels were more fluid than they should have been ; otherwise nothing of interest was observed.

Having finished, Mr. C.'s first question was: "Can you do anything for the balance?" This I declined to answer until I saw the rest of the bunch, which I found in an adjoining field with no shelter but a small straw rick. The other calf that was down had managed to get up. They were all standing around with arched backs, hair turned the wrong way and presenting in general a very unthrifty appearance. Some had diarrhœa, others a husky cough, and Mr. C. said several of them did not come up to feed in the morning. After looking the bunch over carefully I told the owner that I thought with proper treatment most of them would recover, but that I had my doubts about one or two. He said if I thought I could do any good to go ahead.

---

* Read at the Annual Meeting of the Ohio State Veterinary Medical Association, at Columbus, Ohio, Jan. 28, 1897.

I ordered them removed to a warm shed and to be fed on corn and oats ground together. Not knowing what I would find, I had not come prepared to treat them, so I returned home. When I went back the next day I found my patients in a warm shed. I directed two assistants to catch and secure each animal, while I administered the following intratracheal injection :

℞	Turpentine,	ʒ i.
	Carbolic acid,	mx.
	Olive oil, q. s.	ʒ ii.

I also ordered turpentine, ℥ ss, in one pint of milk, to be given each calf every morning for three successive mornings, then to wait three days and repeat the dose. I also prescribed a tonic composed of ferri sulph., pulv. gentian, magnesium sulph., and chloride of sodium, to be given in feed twice a week.

On the 19th I again called. I found the animal that had been down dead ; but all others improving. All were eating better, cough and diarrhœa had stopped. I again repeated the intratracheal injection, also ordered the turpentine and milk repeated. I again saw them on the 27th and all were improving in flesh and all symptoms of parasitism had disappeared.

[This paper was well illustrated by the fresh specimen of a lamb's bronchi containing numberless strongyli.]

OUTBREAK OF CEREBRO-SPINAL MENINGITIS.

By E. F. Koehler, D.V.S., Easton, Pa.

On February 23, 1897, I was called in consultation with another veterinarian to examine a number of horses owned by a farmer. Upon my arrival one gelding, quite aged, was dead, another, a two-year-old colt, was lying down and unable to rise ; another gelding, aged about ten years, was drowsy, unable to swallow, although willing, with a discharge of stringy saliva from the mouth, weak, flabby muscles and staggering gait. Another, a gray mare, about eight years old, was in about the same condition. The temperature of all was about normal, the pulse slightly decreased. The remaining horses were comparatively well.

At the autopsy upon the horse that was dead all internal organs were normal, but upon examining the brain found slight congestion of the coverings and a milky or whitish fluid in the interior of the medulla oblongata and around the roots of the nerves.

Upon inquiry of the owner as to his feeding, we were informed that he had started to feed malt about three weeks previous to the outbreak of this affection, which had turned sour; besides, his horses were in somewhat of an anæmic condition, with none the best hygienic surroundings.

In communication with the attending veterinarian, I was informed that the remaining horses were affected with the same malady, and that all had died in about twenty-four to forty-eight hours after the first symptoms developed.

EXPERIENCES WITH SANMETTO IN VARIOUS DISEASES.

By W. CHAS. COVEY, D.V.S., Hudsonville, Mich.

About the time I was looking over the museum of the American Veterinary College, in New York, April 2d, a neighbor's horse near this place was taken with a very severe attack of azoturia, and a neighboring veterinarian was called in. He prescribed aloes, potass. nit., aconite, etc., as indicated. I got home Saturday night, April 3d, and was called the next day. Found the horse, a large four-year-old, unable to rise; temperature 105.2. Had no control of his hind parts; drank ravenously, but would not eat a thing. Gave veratrine mur. hypodermically and prescribed sanmetto in half-ounce doses every four hours. Called the next morning and found my horse eating, but still unable to rise; temperature 100.4. Continued sanmetto, with thirty-drop doses of nux vomica. Called again Tuesday afternoon, and found horse up and convalescent. He is now at work. Since then I have had two other cases of equal gravity, to both of which I gave sanmetto, with equally good results.

I have been treating a fine stallion for two or three months, troubled with maladie du coit, with but indifferent success. One week ago I prescribed sanmetto in ounce doses night and morning. The discharge has stopped, and I believe him to be permanently cured. But I shall continue the sanmetto treatment for another week anyway, to allay all tendency to urethral inflammation. I am also prescribing sanmetto in a case of acute nephritis in a valuable cow, with good prospects of a speedy and safe cure.

As I understand it, sanmetto is a scientific blending of the true santal with saw palmetto, and in it, I think, I recognize a godsend to our veterinary practice in all cases of kidney, bladder, or urethral inflammation. Should other practitioners have the same success that I have had with the remedy, I believe that the above-named diseases will have lost much of their horror to the profession.

EXTRACTS FROM EXCHANGES.

FRENCH REVIEW.

LYMPHO-SARCOMA AT THE ENTRANCE OF THE CHEST IN A COW [*By Prof. M. G. Moussu*].—This cow, which was found one day by her owner very tympanic, was tapped by him, but, presenting some "lumps" in the dewlap, was treated by an empiric, who prognosticated an early death. As this fatal termination was rather slow to occur, a veterinarian was called, who referred the animal to the Alfort School for observation or treatment. At the time of admission the animal was dull, tympanitic, and presented a peculiar deformity of the dewlap, extending to the entrance of the chest. In manipulating it, the swelling, not well defined, seemed hard, not depressible, moderately œdematous, scarcely painful, and not adherent to the skin. The lower part of the jugular grooves was full. On the left side, the prescapular glands were enormous, projecting and movable; the gland of the point of the shoulder was hypertrophied; and deep manipulation gave the sensation of a hard, irregular mass, somewhat bosselated, occupying the entrance of the chest. On the right side, the prescapular glands were free from disease, but the jugular groove and the peritracheal region were filled with a diffused, bosselated swelling, painless, similar to that of the opposite side. The intermaxillary space was the seat of a slight œdematous swelling. The appetite was more or less impaired, mastication easy, deglutition difficult more or less for solid food, more easy for liquids. Tympanites permanent, but without serious character; defecation was rare and diarrhœic. Nothing abnormal in the respiratory apparatus; no peculiar symptoms on auscultation. There was a slight acceleration of circulation, pulse 70 to 80; heart sounds normal; jugular swollen, bulging under the skin, no venous pulse. Histological examination showed no excess of white corpuscles. Temperature 39° to 39.5°. Diagnosis, made by exclusion, was that of malignant tumor of the chest, surrounding the trachea, with a serious prognosis and no justifiable form of treatment to prescribe. At the post-mortem a *lympho-sarcoma* was found ; it weighed 15 kilogs, occupied the anterior mediastine, the entrance of the chest, and the trachea as far as the middle of the neck. The lower insertions of the pretrachial muscles were involved in the diseased process, and in its upper part the tumor was hollowed by a longitudinal groove surrounded the trachea, æsophagus, carotids, etc. With the naked eye, the tumor was of a yellowish white, hæmorrhagic here and there, softer than external manipulation supposed it to be ; it had the aspect of an encephaloid sarcoma. The pressure it made upon the carotid was such that the calibre of the right vessel was reduced by half. Histological examination confirmed the diagnosis.—(*Rec. de Med. Vet.*)

RADICAL TREATMENT OF UMBILICAL AND VENTRAL HERNIAS IN ANIMALS [*By P. Cordelier*].—After passing in review the various forms of treatment recommended for these affections, the author considering the advantages offered by antiseptic measures in all cases of surgical interference for abdominal diseases, describes a form of treatment with which he has already obtained a number of successes, which consists in the application of antiseptic precautions in connection with the opening of the hernial sac, the dissection of its walls, the reduction of the protruding organ, and the obliteration of the hernial opening with ligatures of catgut passed through the edges of the orifice, and supported by the sewing of the skin either with hairs of Florence or pin sutures. The whole being completed by an antiseptic dressing of iodoform or salol with iodoformed gauze or sterilized cotton, held in place by several turns of wide rollers round the body of the animal, this dressing being left in place for several days and removed after complete recovery, generally occurring in about two weeks.—(*Rec. de Med. Vet.*) [This form of treatment is quite familiar to American veterinarians and in common use for umbilical hernias of dogs.—EDIT.]

ENGLISH REVIEW.

SCROTAL HERNIA IN FOALS [*By Mr. E. P. Edwards*, M.R. C.V.S.]—This trouble was met by the author five times in foals from one to three days old, which were characterized by the same symptoms, viz. : a swelling in the region of the groin, varying in size, the largest met with being an irregular, soft and easily reduced tumor, hanging down more than half way to the hock. The older patients showed constitutional disturbance, groaning, pains, refused to suckle, circulation and respiration accelerated, temperature not higher than 103°. Rectal examination showed the meconium wedged in masses in the passage. Whenever the little animal strained to expel it, the hernia would become more tense. For treatment the author recommends removal of the meconium by glycerine or warm water injections, with the finger or a wooden spoon. Be sure that all of the meconium is removed. Laxatives have also been given. Bandages are not necessary, on the contrary they may do mischief.—(*Vet. Record.*)

FISTULA OF THE ŒSOPHAGUS [*By W. L. Cockburn*, M. R. C.V.S.].—The subject was a bay horse, which, having had a chill after a day's work, when it was exceedingly cold, was treated and apparently got well. He was not seen for twelve days after, and when called to visit him the author found him with an incision made just behind the angle of the inferior maxilla in the jugular groove, from which saliva was flowing. On passing the finger into the wound, a mass of bran and food was found. Fluids, if swallowed, were expelled from the opening, and a large part of the solids were returned through the nostrils. The owner, questioned as to the presence of the incision, said that the animal's throat had swollen two days before, that it had been punctured by an empiric, who seemed rather puzzled "about the queer looking matter" which exuded from the puncture. The animal was destroyed and on post-mortem a fistulous opening of the œsophagus was found just behind the pharynx, on the superior face. The swelling seen during life was found to be due to the ingesta having been forced through the fistulous opening, making a way for itself on each side, more than filling up the jugular groove for eight or nine inches down the neck. The tissues presented a gangrenous aspect and had a very foul odor. Two clean cut incisions were found (one on each side) in the œsophagus, opposite the external wound, the knife having been passed right through the cavity of the oesophagus, piercing the opposite side, rather a formidable operation, on account of the large blood vessels of that region. The correct original cause of the fistula could not be found.—(*Vet. Journal.*)

SOCIETY MEETINGS.

PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.

The fifteenth annual meeting of the Pennsylvania State Veterinary Medical Association assembled in Odd Fellows' Hall, Broad and Cherry Streets, Philadelphia, March 2 and 3, 1897, at 11 o'clock. The meeting was called to order by the President, Dr. Ridge. The following members were present during one of the sessions:—Drs. Adams, Allen, Benner, Bland, Bridge, Collins, Conard, Collins, Felton, Farley, Formad, Gladfelter, Goentner, Harger, J. R. Hart, W. L. Hart, Hartman, Hoskins, Houldsworth, Keelor, Kooker, Kahn, Larycled, Lentz, Lusson, Marshall, McAnulty, J. C. Michener, W. B. E. Miller, Noack, Oyler, Pearson, Phipps, T. B. Rayner, John B. Rayner, Reinhart, Rhoads, Ridge, Schauffler, Schreiber, Tintzman, Turner, Underhill, Webster, Williams, and Koenig. There were present as visitors Drs. Budd and Nice, of New Jersey, and Dr. Eaves, of Wilmington, Del. There were also a large number of attendants from the Veterinary Department of the University of Pennsylvania. Messrs. Barnes, Chief of Milk Inspection of the city; Dr. Chester Morris, of Chester, and H. Abbot, Morris, Garrett and Gravenstine and others.

The minutes were read and approved as corrected.

The President then delivered his address, dwelling at some length upon the changes that have taken place in the practice of veterinary medicine during the past ten or twelve years. He pointed out how comparatively easy it had been in years past for the veterinarian to acquire sufficient knowledge to enable him to give satisfaction to his clients. Not so to-day. He who would keep in the front rank of his profession must continue his studies and press on, owing to the rapid strides made in sanitary science, and the growing demand for his services in that direction. It is in this field that the veterinarian must prepare himself for future work.

The election of officers was laid over for a time.

The application of Dr. B. M. Underhill was then presented to the Board of Censors. In the absence of Drs. Zuill and McNeill of the Board of Censors, the Chair appointed Drs. Gladfelter and Turner to act in their place. There was then a recess of fifteen minutes, that the Board of Censors might transact necessary business.

Dr. Underhill's name was favorably recommended; also the names of Drs. W. W. Martin and J. S. Weicksel during the session, and all were elected to membership.

The Board also reported favorably the amendment to Article VII, Sec. T. The report was received.

A motion was then made that a Committee on Resolutions be appointed.

The Chair appointed Drs. Hoskins, Conard and Lensman.

Election of Officers.—The following were elected: President, James B. Rayner; First Vice-President, M. E. Conard; Second Vice-President, J. C. Foelker; Third Vice-President, Geo. B. Jobson; Treasurer, John R. Hart; Recording Secretary, Jacob Helmer; Corresponding Secretary, W. L. Rhoads. Board of Censors—Drs. Ridge, Hoskins, Sallade, McNeil.

The subject of members removing to another State remaining as members of this association was referred to the Board of Censors after a discussion of some length.

The Secretary on reading his report showed the association to have a membership of 124. At the semi-annual meeting four new members were added, as follows: Drs. Geo. Jobson, Edward Hagg, W. H. Wilson, and W. P. Phipps. The association also lose three by resigning—Drs. McClellan, Blaker and Koenig—and Dr. William Tag, who recently died.

The Treasurer's Report showed the financial condition of the association to be better than ever before; assets, $293.33; liabilities, $83.31, leaving a balance on March 2, 1897, of $210.02. The amount due from members is $451. The Chair appointed Drs. Felton and Lusson to audit the accounts, and they reported them correct.

The Report of the State Board of Veterinary Examiners was then made. In the report Dr. Harger stated that the Board had examined twenty-eight applicants for the licence to practice veterinary medicine in this State. Of this number seventeen were successful, ten had attended schools requiring two courses of instruction and seven were from those requiring three years' attendance. Of the entire number, twenty-eight, eight were from three-year schools, and the remainder, seventeen, from schools which at the time required an attendance of two years. From the former number, eight, all but one were successful, while from the latter number (twenty), only ten, or fifty per cent., were successful. He further stated that these figures were a positive indication in favor of higher veterinary education. He also remarked that there had been numerous drawbacks, which always occur under such conditions. One of the most serious among them being that of illegal registration before and since the passage of the law of 1895. Prothonotaries through the State seem to be poorly informed as to the act that created the Board. In many instances they have allowed veterinarians to register in their respective counties on presenting their diploma, without recognizing the fact that such applicants are, by the State law, required to pass an examination. In other cases some have registered without presenting a diploma. Hence it is that the Board is constantly being appealed to for aid, and since they (veterinarians) have that right to ask for aid under the law—they should be protected from impostors and persons who are through humbuggery and illegitimate means, taking away their bread and butter. He stated that legal proceedings were necessary, and appealed to the association to devise some means whereby the Board might be enabled to execute thoroughly the work already begun.

Dr. Turner reported that in Bucks County a professional dehorner appeared and upon being threatened by suit for violating the law, left the State.

Dr. Rhoads made a motion that the Board should institute a suit against persons dehorning cattle. Seconded and carried.

Dr. Harger said it would take money and moral support to carry on a suit to a successful termination.

Dr. Kooker made a motion that the association donate the sum of one hundred dollars to be used by the Board of Examiners to prosecute violators of the law. Seconded and passed.

Report of the Committee on Legislation.—Dr. Hart said that after careful consideration by the committee on the amendment to increase the examination fee to the "Examiners Board," recommended by the Pennsylvania State Veterinary Medical Association, it was deemed unwise to take any action at this time, for fear of opening legislation for other amendments that might alter the entire features of the bill. The committee agreed to look up such measures necessary to organize a Veterinary Department in the Pennsylvania National Guard. The committee also reported that they had received fifty dollars contributed to the Pennsylvania State Veterinary Examiners Board, to be used in the interest of the profession, and recommended that the association also contribute.

The association then adjourned for dinner, and when it reconvened it continued the discussion on legislation.

Dr. Hoskins said it had come to his notice that there was a bill before the House for the examination of milk.

Reports of County Secretaries.—The following were heard from: Drs. Turner, Magee, Noack, Cawley, McKenna, Timberman, Oyler, Stanton, Conard, Bradley, Foelker, Sallade, Lusson, Collins, Irons, and Lintz. Many furnished lists of all graduates and non-graduates registered in their counties.

Report of Committee on Sanitary Science and Police.—Dr. Pearson (chairman) made the following report:

November 2d, 1897.

Mr. President and Gentlemen:

As chairman of the Committee on Sanitary Science and Police, I beg to submit to you the following report on the infectious diseases of animals as they have come under my observation during the past year and to make some statements in reference to the work of the S. L. S. S. B.

The State Live Stock Sanitary Board has at this time been in operation for approximately one year. The State Veterinarian was appointed on January 1, 1896, and the board was organized and its rules and methods were formulated shortly thereafter. It was not, however, until about this time last year that active work could be undertaken, so that my present report relates chiefly to observations that have been made since our last annual meeting.

The extent of the work that has been done during the past year and the rapidity with which it has grown indicate the manner in which the operations of the State Live Stock Sanitary Board have been accepted by the owners of animals and by the veterinary profession.

Inspections have been made in nearly every county of the State; in some counties they have been very numerous. It is gratifying to note that applications for assistance from the owners of animals afflicted with contagious diseases, particularly tuberculosis, are most numerous and are increasing in number most rapidly from those sections in which the most work has already been done.

A large number of diseases have been brought to the attention of the Live Stock Sanitary Board, among which I wish to mention the following as being of special interest and importance.

Corn-stalk Disease.—Corn-stalk disease is an affection which has prevailed extensively in the corn-growing districts of the West, and particularly in Iowa, Nebraska, and Kansas, for a number of years, but very few outbreaks have been reported from the Eastern States, and, so far as I know, the disease has not been recognized in Pennsylvania until the present season. During the past few months several outbreaks of disease among cattle have been reported and investigated that were characterized by the following features: excitability, abdominal pain, disinclination to move, constipation, weakness, paralysis and death. In every instance thus far it has been possible to determine that cattle thus afflicted were fed on corn-stalks that were in a mouldy condition. In one outbreak that I looked into recently in Lebanon County it was found that six cattle had died. During the day they were kept in a yard that was littered with corn-fodder from a stack in an adjoining field. The fodder was very mouldy and the stalks were thickly coated with a grayish mould near the base of the leaf. The yard was cleaned up and the use of this fodder was discontinued, since which time there has been no recurrence of the disease.

This disease has been the object of a special investigation conducted under the auspices of the United States Bureau of Animal Industry, but it has not yet been determined whether it is due to the infection of the animal by a fungus or bacterium that exists in the corn-fodder or whether the disease is a toxæmia resulting from the ingestion of the chemical substances produced by the organisms that multiply in corn-fodder under certain conditions.

Dr. Edwin Hogg, of Kirkwood, Lancaster County, successfully treated six cows afflicted with this disease, while an equal number in the same herd died. His treatment consisted in administering Glauber's salts and the use of atropine subcutaneously. The paralyzed animals were raised in slings twice a day and kept up for a short period each time.

Post-mortem examination of animals dead of corn-stalk disease usually reveals a negative condition. Sometimes there is an effusion of serum in the connective tissue about the kidneys, and the lungs may be somewhat congested or œdematous. The fact that the lesions are so slight tends to support the view that the disease is a poisoning due to the ingestion of the substances mentioned.

Abortion of Cows is a disease that has occasioned great losses in many parts of the State, and particularly in the dairy districts. Many cases have been reported in which it recurs in herds from year to year, so that the profit from the herd is entirely destroyed and in some instances the losses that result from this cause are ruinous. The disinfection of the premises and the disinfection of the genital passages and organs of the cows usually result in at least an amelioration of the condition. The subcutaneous injection of a weak solution of carbolic acid is also highly recommended by some who have tried it, and my own experience with this method of treatment has encouraged me somewhat. As yet it is not possible to explain how carbolic acid administered in this way and in such small quantities could have a beneficial action, but Dr. M. E. Conard, of West Grove, who has used it in a number of outbreaks, has great faith in its efficacy. The cause of abortion is still undetermined, and this should be a fruitful field for investigation. So long as the cause of the disease remains unknown all measures directed against it are like fighting an enemy in ambush, but as soon as the cause is discovered and its characteristics are made known the sanitarian has decidedly the best of the contest.

Hog Cholera has prevailed extensively all over the United States during the past season. It is estimated that the loss in Iowa resulting from this disease alone has amounted to more than $10,000,000 during the past twelve months, and, while other States have not suffered so excessively, they have likewise lost extensively. Most of the outbreaks that have appeared in Pennsylvania have occurred as the result of the introduction of Western hogs for fattening. Stock hogs from the stock yards in Chicago and Buffalo have nearly all of them been exposed to hog cholera, because the disease has prevailed to such an alarming extent that it is scarcely possible for a susceptible animal to pass through a stock yard or to be shipped in undisinfected stock cars without being exposed to the contagion of this affection. When once introduced into a farming district in this way hog cholera is spread by the interchange of animals or objects that have been in contact with them. In some instances the spread of the disease has been hindered or prevented by quarantining infected herds and confining them strictly to the premises of their owners. Some of the outbreaks that have occurred during the past season have been characterized by the extreme rapidity with which they have spread and destroyed their victims.

In my last annual report for the year 1896 I stated that the total losses from this cause would probably amount to $350,000. Subsequent observation and correspondence have convinced me that my estimate was too low, and that the losses amount to at least five or six hundred thousand dollars.

Since the work of the Live Stock Sanitary Board is wholly new and in a condition of development, active measures relating to the control of this disease have not been undertaken with the exception of quarantining some of the infected herds and in that way protecting swine of the immediate vicinity, and the distribution of a bulletin entitled "Hog Cholera and Swine Plague," issued by the Bureau of Animal Industry. It is hoped that more effective measures can be devised and inaugurated before long.

Osteo-Porosis has prevailed to an alarming extent, or at least a large number of cases have been brought to my attention, during the past year. It may be, however, that the increase is more apparent than real, but it is evident that a large number of horses are incapacitated from this cause and a number of vague and indefinite lamenesses result from this disease. The cause of osteo-porosis is still undetermined, and until we have more information on this point all attempts to cure or prevent the disease will be purely empirical and probably to a large extent unsuccessful.

Glanders has not prevailed extensively. It may be, however, that since the dangers of this disease are so thoroughly understood only a portion of the cases that are dealt with by veterinarians and local authorities are reported to the Live Stock Sanitary Board. During the past year 26 horses with glanders were destroyed.

Anthrax.—It has been shown during the past season that many of the outbreaks reported as anthrax are beyond doubt red water, and it seems probable that there is not nearly as much anthrax in this State as was formerly supposed However, the genuine disease has appeared in Pennsylvania, and the State Live Stock Sanitary Board will have prepared and ready for use some vaccine to be employed in preventing this disease whenever it is necessary to use it.

Rabies.—The investigations of rabies made under the direction of the State Live Stock Sanitary Board have included visits to and inspections in the districts in which the disease has appeared, the tracing of animals reported as rabid and animals bitten by them, the inoculation of rabbits from the brains of dogs and other animals reported as rabid and the quarantining and destruction of dogs and cattle in the acute stage of rabies, and when they have been bitten by a dog that was undoubtedly afflicted with this disease. These investigations have demonstrated conclusively that rabies actually exists, and during the past season to quite an alarming extent among the domestic animals of this State. It has been remarked that some outbreaks of the disease are of an excessively virulent and others of a comparatively mild nature; that is, some dogs produce rabies in nearly every animal bitten by them, while others produce rabies in a comparatively small proportion of the animals bitten, and sometimes the disease appears in the paralytic or dumb form. Variations in the strength of the virus of this disease have been studied for a long time and have been produced artificially in laboratories, and it has been observed that under certain conditions the disease becomes progressively milder until finally the virus loses its virulence to such a degree that it will not produce the characteristic symptoms of this disease, but by passing this attenuated virus through an animal of a different species its virulence can be restored, and it has been suggested that rabies of dogs always has a tendency to become milder with each succeeding generation, and unless another animal, a cat, for instance, is bitten and in turn bites a dog, thus propagating the disease, it will in time become practically harmless. There are some places in this State where rabies is stationary and cases among dogs are of frequent occurrence, but of such a mild type as to cause but little apprehension. But occasionally a dog in the furious stages of the disease will appear and bite animals or people and cause much alarm in a large territory, and a number of cases of rabies often follow a raid of this sort. While all undue excitement should be avoided, it appears that there is no good purpose to be accomplished by hiding the facts connected with this disease, but it should be explained fully and freely that the existence of rabies constitutes a serious menace to communities in which it exists, but that all dogs that have fits, become excited, or bite, are not mad, and that rabies is a comparatively rare disease, the diagnosis of which is attended by some difficulty.

Tuberculosis.—The greatest attention has been devoted during the past year to the subject of tuberculosis of cattle. The question as to how to deal with this disease in the most profitable and satisfactory manner has been a difficult one to solve, and it has received the earnest consideration of the State Live Stock Sanitary Board. A great number of possible methods have presented themselves and have been suggested, but most of them have been rejected on account of obstacles that are not surmountable at this time. The plan that is pursued at present is to examine herds wherever and whenever examinations are applied for, but only upon receipt of a formal application which contains an agreement upon the part of the owner to do all in his power to prevent the reintroduction or development of tuberculosis in his herd and to observe the precautions and measures recommended by the State Live Stock Sanitary Board for this purpose. Upon the receipt of an application of this kind a tuberculin test of the entire herd is ordered and the animals that prove to be tuberculous are appraised and destroyed, although an alternative has been provided in accordance with the following rule:

"When herds are examined and tested at the request of the owner: (A) Cattle that present physical symptoms of tuberculosis must be destroyed, after an arrangement as to their value has been made that is satisfactory to an authorized representative of the State Live Stock Sanitary Board and to the owner or his agent; or after the cattle have been regularly appraised.

"(B) Cattle that respond to the tuberculin test but do not present physical symptoms of tuberculosis and, in particular, have healthy udders may be kept by their owners, subject to the following conditions: 1. The tuberculous cattle shall be marked with a suitable tag in the ear, or otherwise, and quarantined on certain defined premises. 2. These cattle shall be kept apart from other cattle and in buildings and enclosures in which other cattle are not kept and are never allowed to go. Or, if it is impracticable to provide a separate building for the tuberculous cattle, they may be kept in a building in which other cattle are stabled : provided, they are separated from the other cattle by a tight partition, the construction of which is satisfactory to a representative of this Board, which divides the building into two entirely distinct apartments with separate doors, separate accommodations for feeding and watering and separate yards. 3. The calves from these quarantined cows may be raised : provided, that they shall, immediately after birth, be removed from the premises in which tuberculous cattle are kept, and that they shall not be allowed to drink any of the milk from their dams or from other quarantined cows, except after boiling, or heating to 185° Fahrenheit. 4. The milk from cows so quarantined, shall be used for no purpose whatever, except after it has been boiled, or heated to 185° Fahrenheit. 5. Cattle quarantined as above may be slaughtered for beef: provided, that they shall be inspected at the time of slaughter by a competent inspector approved by this Board, and the flesh must be destroyed or may be sold for food, according to the judgment of such inspector; and provided further, that when this alternative is selected it shall be in lieu of indemnity from the State Live Stock Sanitary Board, and all claim for indemnity is thereby forfeited, except for such animals as are condemned by the meat inspector, in which case the appraised value shall be paid.

"(C) If the owner of cattle that have responded to the tuberculin test elects to accept the indemnity provided by law, and so informs the authorized representative of the State Live Stock Sanitary Board, such cattle will be appraised, destroyed and examined post-mortem under the direction of a representative of the Board."

This arrangement has been made for the purpose of accommodating the owners of animals who do not wish to have them appraised and destroyed immediately after they are tested and found to be afflicted with tuberculosis. The conditions are such that it is not possible for tuberculosis to be spread by cattle kept in accordance with them, and although they may not permit of the convenient utilization of tuberculous cows, it does not at this time seem possible to moderate them in any degree without endangering the live stock interests.

One great difficulty that has confronted the Board in its work has been in relation to supplying a source to which farmers can go for cattle that they may be sure are free from tuberculosis, for the purpose of restocking herds from which tuberculous cattle have been removed. Cattle buyers are recommended to purchase no cattle that they have not good reason to believe are free from tuberculosis, and since one cannot ascertain this point satisfactorily without the tuberculin test in those cases in which it is not possible to visit the herds from whence the cattle that are offered for sale come, and since it is not practicable to insist on a certificate of health based upon the application of the tuberculin test in all cases, it has not always been possible for farmers to buy cows that they could be sure about. It has been suggested that this difficulty can be overcome by providing that all cattle coming into Pennsylvania from other States shall only be admitted upon presentation of evidence that they are entirely free from tuberculosis and a bill has been introduced before the present Legislature that will establish this requirement. This will make it possible for farmers to purchase cattle that they can be sure about and will be a long step in advance of our present position and at the same time will not add to the expense that the State is already put to. About six thousand cattle have been tested with tuberculin under the direction of the State Live Stock Sanitary Board, and of these about one-fourth have been condemned, but of course this does not represent the actual percentage of tuberculosis among the cattle of our State, because inspections have only been made in herds that were supposed to be infected. However, many of these herds that were supposed to be infected have proven entirely free from tuberculosis. The percentage of tuberculosis in herds has varied from 1 to 100 per cent., and the week before last a herd comprising about 175 was found to be tuberculous to the extent of 95 per cent. It has become perfectly evident that the percentage of tuberculosis in the herd depends principally upon the length of time that the infection has existed. In old cases of infection, particularly in breeding herds, the entire stock is sometimes saturated with the disease; whereas, if the infection is recent, a comparatively small number of animals are found to be afflicted, perhaps not more than one or two. The sanitary conditions also determine to some extent the rapidity with which tuberculosis spreads in a herd. Notwithstanding the general views in regard to this point and my own preconceived opinions upon it, I have not been able to demonstrate to my own satisfaction just what influences are most favorable or most unfavorable for the rapid transmission of this disease. It is quite easy to deduce inferences on this subject based upon our knowledge of the disease, the vitality of the tubercle bacillus, etc. While these inferences may seem to be supported in some isolated cases, the careful observer will find many illustrations of exceptions to what he has supposed should be the rule. For example, tuberculosis has been known to spread with great rapidity among animals kept in well ventilated stables and stables that were well lighted and even out of doors, while the cattle were at pasture. Some observations made in Iowa and some made in Scotland show that tuberculosis can spread extensively in herds that are never stabled. Since it has been shown conclusively that heredity has but little part in the transmission of tuberculosis, there has been a general tendency among writers on this subject to dwell upon the importance of the inherited predisposition to the disease. But the very careful and extensive work conducted in Denmark by Prof. Bang seems to show that after all this is a matter of minor consequence, and general observation indicates that contagion, actual exposure to cattle afflicted with tuberculosis, is the thing that it is most important to guard against, and if this is guarded against thoroughly the most important precaution has been taken. It is, however, exceedingly important that one should know the exact value of good sanitary conditions and what sanitary arrangements are best adapted to prevent the rapid spread of tuberculosis in a herd. A great many diverse opinions prevail on this subject and a great many cheap views on it are aired from time to time in the public prints, but there is a great lack of accurate information and demonstrated facts that would be of the greatest value and should be supplied. The State Live Stock Sanitary Board has realized the need of further knowledge in reference to many of the diseases of animals, and has instituted a laboratory at the Veterinary Department of the University of Pennsylvania, wherein investigations can be made and where tuberculin, mallein, anthrax vaccine and black-leg vaccine are prepared. Several investigations are now under way and it is hoped that the facilities for this work can be increased in proportion to its importance, so that more of the many vague and perplexing questions that beset the veterinarian may be studied and more effective means for the prevention and cure of disease among animals may be developed.

I wish to thank the veterinarians of the State for their indispensable and ever-ready assistance whenever they were called upon to aid in the work of the Live Stock Sanitary Board ; the kind and willing manner in which they have responded to all calls made upon them has been exceedingly gratifying, and without it the results that have been attained would have been impossible.

The fact that the live stock industry of Pennsylvania represents approximately $125,000,000 and suffers losses approximating $6,000,000 as a result of diseases that are probably preventable, indicates the importance of the work that is going on under the direction of the State Live Stock Board. This work will unquestionably grow in importance and extent, and that it may grow in such a way as to yield the greatest return for the money expended, it is to be hoped that provisions can be made for more extensive researches that will lead to a better understanding of the best means for the suppression of these numerous diseases, and this can only be learned by a more careful study of their causes, their exact methods of transmission, the conditions that are favorable or unfavorable to them.

Meat Inspection is a subject that is growing in importance and the public is becoming educated so rapidly to the necessities in this connection that there is reason to believe that more thorough and valuable methods will soon be in operation.

Dairy Inspection has been introduced by some dealers in milk, and they find it so much to their advantage that there is a growing demand on the part of cattle owners for an inspection that will eradicate from their herds all animals that will in any way contaminate or injure their products and thus furnish the public with a guarantee of healthfulness that will greatly increase the sale of dairy products.

Discussion on Dairy Interests of the State.—The President called upon the following : Mr. Barnes, chief of the city milk inspectors ; Drs. Harger, Pearson, Adams, T. B. Rayner, Conard, and Schreiber ; Messrs. Henry Abbott, Garret, Chester Morris, of Chester, Mr. Morris, of this city, and others.

Dr. Hoskins announced that Dr. Koenig, who resigned at the last semi-annual meeting, wished to be reinstated. To be acted on later. Reinstated.

Meeting adjourned for the day.

The meeting for March 3d was called to order by the President at 10.30 A. M.

Dr. Hoskins called attention to the Pasteur Monument Fund. Moved and seconded that the association donate $10. Carried.

Dr. Hoskins also announced that the next meeting of the U.S.V.M.A. would be in Nashville, Tenn., the first Tuesday, Wednesday, and Thursday of September.

The following was proposed by Drs. W. L. Rhoads and Hoskins: Amendment to the By-laws of the Pennsylvania State Veterinary Medical Association, governing the election of officers, "That there shall be an intermission of fifteen minutes after the nomination of officers and before proceeding to an election." Ordered laid over till next meeting.

Letters of regrets from Drs. J. B. Rayner, McLean and J. C. Foelker. Dr. Pearson's resolution that the date of the semi-annual meeting be changed to the *third* Tuesday in September of each year was carried.

Reading of Papers.—The following papers were read: Dr. M. E. Conard, "Abortion"; Dr. John R. Hart, "Azoturia"; Dr. Leonard Pearson, "Tetanus"; Dr. Charles Williams, "Cannabis Indica"; Dr. W. L. Rhoads, "Why"; Dr. S. J. J. Harger, "Tuberculosis in the Dog"; Dr. L. O. Lusson, report of a case of "Sun Stroke."

Report of Board of Censors on Resolutions.—The following resolution was offered and endorsed:

> *Resolved*, That the association endorse such measures taken by the Pennsylvania State Board of Veterinary Medical Examiners as will lead to the establishment of the dehorning of cattle as a surgical operation, to be practiced only by qualified veterinarians.

Resolutions were also drawn up and ordered to be sent to Drs. J. C. Foelker, James B. Rayner, McLean and the family of the deceased Wm. Tag, extending the sympathy of the association in this their time of trouble and bereavement.

A vote of thanks was extended to the outgoing officers for their faithful services, etc.

The new officers were then introduced.

It was decided that the semi-annual meeting be held on the third Tuesday in September at Oil City.

Meeting adjourned at 5.10.

F. S. ALLEN, M.D., D.V.S., *Cor. Sec'y.*

IOWA STATE VETERINARY MEDICAL ASSOCIATION.

The ninth annual meeting of this association was held in the Capitol Building, Des Moines, Jan. 13 and 14, 1897.

The meeting was presided over by the President, Dr. L. U. Shipley, and the following named members answered to roll-call: E. E. Sayers, J. A. Campbell, W. B. Niles, L. U. Shipley, J. I. Gibson, J. E. Brown, J. O. Simcoke, C. J. Hinkley, W. A, Heck, W. H. Austin, S. H. Kingery, H. L. Stewart, J. L. Williamson, H. E. Talbot, C. E. Stewart, R. P. Thurtle, S. T. Miller, D. H. Miller, and G. A. Johnson. There were present as visitors during the sessions: Drs. J. W. Griffith, of Cedar Rapids, Ia.; A. C. Woods, Council Bluffs; J. H. McLeod, Charles City; C. Millar, Ottumwa; H. W. Shanks, Millersburg; A. A. Peters, Wintersett; P. O. Koto, Forest City; J. Thomsen, Armstrong; E. G. Martin, Schaller; A. T. Peters, Veterinarian to the Experiment Station of Nebraska; Dr. J. F. Kennedy, Secretary of the Iowa State Board of Health, and W. K. Boardman, State Dairy Commissioner.

Minutes of the previous meeting were read and approved. Drs. G. A. Johnson and D. H. Miller were appointed to fill vacancies on the Board of Censors.

The address of President Shipley reviewed the dull times of the past two years, the future prospects, hog cholera in Iowa in 1896, and put forth some timely advice to the veterinarians of Iowa regarding their duties to the State and the United States associations and to the profession.

The Secretary's report showed that the association had 81 active and 7 honorary members. Sixteen of the active (?) members were three years or over delinquent on dues. That owing to these delinquents, and the extraordinary expenses of the association during the past three years, the Treasurer would not have sufficient money to meet all the obligations of the society. The report also stated that owing to the unremunerative condition of the veterinary business during the past two or three years, quite a number of veterinarians had given up the practice of the profession. That 75 postal cards were sent out from the office of the Secretary to representative practitioners in the State, asking for a comparison of the business done during the first nine months of 1896 with that done during the first nine months of 1895. The general average of the reports returned showed but a very slight change. The report of the Treasurer was read and referred to an auditing committee, consisting of Drs. Austin, Hinkley and Miller.

After receiving a favorable report from the Board of Censors on the applications of the following named gentlemen, the association voted them into membership: John Thomsen, V.S., J. W. Griffith, V.S., W. F. Lazear, M.D.C., C. H. Whitwell, M.D.C., P. O. Koto, M.D.C., H. A. Fee, V.S., J. H. McLeod, D.V.S., C. Miller, V.S., C. A. Woods, V.S., W. G. Jones, V.S., J. H. Spence, V.S., H. W. Shanks, D.V.S., A. A. Peters, V.S., E. G. Martin, V.S.

Dr. G. A. Johnson, Chairman of the Committee an Sanitation, made the committee report.

Dr. J. I. Gibson, Chairman of the Committee on State Legislation, reported progress, and stated that he thought the bill that was introduced last year would become a law this winter.

The association voted that all papers read before the meeting should become the property of the association.

A change of the By-laws, proposed at the last meeting by Drs. Rich and Gibson, to make Art. IV read: "Each member, on being admitted to membership, shall pay the sum of two dollars, and shall annually thereafter pay one dollar in advance to the association. Any member in arrears more than two years shall be suspended until said arrears are paid." On vote of the association, it was adopted.

On vote of the association, all members three years or more in arrears for dues were suspended, but the Secretary was instructed to inform each member so in arrears that the payment of said indebtedness within thirty days would reinstate them.

The association voted to donate five dollars to the Pasteur Monument Fund.

A special assessment of seventy-five cents *per capita* was ordered to meet expenses of the association.

Resignations of Drs. G. P. McNay and G. L. Buffington were accepted.

The Secretary was instructed to correspond with the publishers of the veterinary journals relative to the printing of the report and papers of the meeting, and reprints for the members, and to accept the best proposition obtained.

Adjourned for supper.

The evening session by pre-arrangement was held in the parlor of the Savery Hotel, and to which the members of the Iowa State Agricultural Society (then in session in Des Moines) had been invited. About fifty members of that organization assembled with us to hear the reading of Dr. Peters' papers on "Serum-Therapy in Hog Cholera." President Shipley, in introducing the essayist, spoke of the allied interests of the agriculturists, stock breeders and veterinarians, and extended a cordial welcome to the guests. After the reading of the paper, Mr. John Cownie, Vice-President of the Iowa State Agricultural Society, moved that the paper be published in the report of the Agricultural Society. The same was duly seconded and carried by a standing vote.

Mr. Fields, President of the Agricultural Society, then extended an invitation to the members of the Veterinary Association to attend their banquet. The invitation was accepted, and adjournment made until next morning.

At the morning session, January 14th, the election of officers was taken up, and the following officers elected: President, Dr. G. A. Johnson, Sioux City; Vice-Presidents, Dr. S. H. Kingery, Creston, and Dr. J. H. McLeod, Charles City; Secretary-Treasurer, Dr. J. E. Brown, Oskaloosa. Board of Censors—Drs. D. H. Miller, Harlan; J. I. Gibson, Denison; and W. A. Heck, Keokuk.

Dr. A. T. Peters, Veterinarian to the Experiment Station of Nebraska, and Dr. J. F. Kennedy, Secretary of the Iowa State Board of Health, were elected to honorary membership.

Dr. J. F. Kennedy then entertained the association by reading a most interesting paper, the title of which was "Veterinary Science and Its Relation to Public Health." *

Discussions followed on sanitation, dairy sanitation and inspection, sanitary laws, typhoid fever, hog cholera, etc.

A vote of thanks was extended to Dr. Kennedy for the paper. The association ordered that 300 extra copies of Dr. Kennedy's paper be printed for distribution.

Dr. J. Miller's paper on "Lymphoma" was read by his brother, Dr. C. Miller, in the former's absence.

The paper by Dr. J. Replogle on "Azoturia" was presented by Dr. W. H. Austin, the author being absent. The discussions on this paper were freely taken part in. Dr. W. B. Niles read a paper on "Parasitic Diseases of Sheep." Iowa's State Veterinarian, Dr. J. I. Gibson, presented a paper, "Duties of the State Veterinary Surgeon." Dr. W. A. Heck then added quite a valuable production to veterinary literature on the treatment of "Fungoid Growths," and the same was freely discussed, and many good points brought out. Dr. L. U. Shipley gave a little talk on "The Contagion of Tuberculosis," and presented some

---

* Will be published in an early issue of the REVIEW.

notes of cases which had come under his observation. Dr. P. O. Koto's paper on "The Thermo-Cautery—Its Uses in Veterinary Practice," was read and freely discussed. This was one of the most interesting and instructive features of the meeting. The doctor is evidently quite an expert with the instrument, and has had wonderful success in treating different forms of lameness, atrophied muscles, etc. The paper on "Barium Chloride, Its Use in the Treatment of Colic," by Dr. J. E. Brown, was read and brought forth a lively discussion.

The Committee on Resolutions, consisting of Drs. W. H. Austin, G. A. Johnson and J. W. Griffith, recommend for adoption the three following:

To the United States Congress:

WHEREAS, No scientific man can accomplish good results in his work when handicapped by being placed in a subordinate position, beneath the dignity of the profession which he represents, and

WHEREAS, The veterinary profession has neither rank nor official standing in the United States army, and,

WHEREAS, There is a bill now pending before the National Congress, known as House Roll No. 3012, and Senate Roll No. 1240, establishing the rank and pay of veterinarians in the United States army; therefore be it

Resolved, That it is the sense of the Iowa State Veterinary Medical Association, in a meeting assembled at Des Moines, Ia., this 13th day of January, 1897, that said bill should be enacted.

Resolved, That a copy of this resolution be spread upon the minutes of this meeting, and a copy be forwarded to each member of Congress from this State requesting them to use all honorable means within their power to secure the passage of said bill.

To the United States Congress:

WHEREAS, It is known to the members of the Iowa State Veterinary Medical Association that a bill, known as Senate Bill No. 1552, has been introduced before the United States Congress, which so restricts vivisection and biological science, as to prevent the acquirement of medical and surgical knowledge essential for the prevention and cure of the diseases of the lower animals and mankind, and materially hampers the Bureau of Animal Industry of the United States in its scientific researches; therefore be it

Resolved, That we, the members of the Iowa State Veterinary Medical Association, here assembled at Des Moines, Iowa, on this 13th day of January, 1897, are most emphatically opposed to said bill, and pray our representatives in Congress to use all honorable means to defeat its passage and permit vivisection and scientific research to go unhampered so long as it is conducted in the interests of humanity and public health.

Resolved, That a copy of this resolution be forwarded to each member of Congress from Iowa.

To the General Assembly of the State of Iowa:

WHEREAS, The law now regulating the duty of the State Dairy Commissioner fails to provide for the inspection of the cattle in use in the dairies of the State, and

WHEREAS, This is of vital importance from a sanitary standpoint; therefore be it

Resolved, That it is the sense of the Iowa State Veterinary Medical Association that said law should be so amended as to include the inspection of the cattle, barns, utensils, etc., by competent inspectors.

On motion of Dr. Gibson, "our worthy Secretary" was made a delegate from this society to the next meeting of the Iowa Public Health Assooiation, which meets in Dubuque.

The Secretary then took occation to thank the members for the honors they had bestowed on him—for their hearty support and co-operation in the association's work, and pledged, with their continued assistance, to maintain the reputation for the high standard of excellence which is everywhere accorded the Iowa State Veterinary Medical Association.

President-elect Johnson then announced the committees for 1897:

Committee on Agricultural Press, Publications.—W. B. Niles (Chairman), J. I. Gibson, W. A. Heck, J. Miller, and J. H. McLeod.

Committee on Sanitation.—E. E. Sayers (Chairman), A. C. Woods, and C. E. Stewart.

Committee on State Legislature (held over).—J. I. Gibson (Chairman), S. H. Kingery, and E. E. Sayers.

Committee on Diseases and New Treatment.—W. B. Niles (Chairman), J. I. Gibson, and P. O. Koto.

Following a motion by Dr. Kingery, a vote of thanks was extended to the outgoing officers and essayists for their efforts to make this meeting one of such interest.

On motion of Dr. Gibson the association adjourned to meet at the call of the President and Secretary—time and place of meeting to be decided by them. JNO. E. BROWN, *Secretary.*

THE OHIO STATE VETERINARY MEDICAL ASSOCIATION convened for its fourteenth annual session in Wells Post Hall (G. A. R.), Columbus, Ohio, on Jan. 28, 1897, and was called to order by C. H. Shepard, President, at 8.15 P. M. The attendance was small, probably owing to the inclemency of the weather, roll-call showing the following gentlemen to be present: L. W. Carl, V.S., Columbus; W. F. Derr, V.S., Wooster; J. D. Fair, D.V.S., Berlin; W. H. Gribble, D.V.S., Elyria; T. B. Hillock, V.S., Columbus; W. R. Howe, V.S., Dayton; S. D. Myers, V.S., Wilmington; W. Shaw, V.S., Dayton; E. H. Shepard, V.S., Cleveland; J. M. Waddell, V.S., Columbus; W. E. Wight, V.S., Delaware; and Prof. D. S. White and students Jas. G. Boyd, J. F. Stevens, H. P. Miller, M. J. Myers, Chas. Canfield, of the Ohio State University (Veterinary Department). There were also present, J. F. Adams, President of the Ohio Master Horse-shoers Association; Patrick Kearns, President of the Springfield Master Horse-shoers Association, and W. N. Brown, President of the Columbus Master Horse-shoers Association.

Minutes of the previous meeting were read and approved.

The Chair announced that the first order of business was the nomination and election of officers.

Dr. W. R. Howe moved that the rules be suspended and that the present officers be again selected for another year. Dr. L. W. Carl vigorously seconded the motion. After remarks for and against, those against coming from the present incumbents, the motion was put and declared carried; and the President declared the following to be the officers for the present year: President, Dr. E. H. Shepard, Cleveland; First Vice-President, Dr. W. E. Wight, Delaware; Second Vice-President, Dr. W. R. Howe, Dayton; Secretary, Dr. W. H. Gribble, Elyria; Treasurer, Dr. T. B. Hillock, Columbus.

President Shepard made a brief address, referring chiefly to the drift of veterinary practice, owing to the use of electricity and the bicycle, also speaking of the necessity for a higher education at our veterinary colleges, and also that he wished that greater harmony prevailed between veterinarians and horse-shoers, and that he had taken the liberty of inviting to this meeting the President of the Ohio Master Horse-shoers Association, who had prepared a paper which would be read before this body, and he hoped it would be thoroughly discussed.

Communications were read from absent members and others, and disposed of as those present thought best.

The Secretary read his report, which was ordered printed as part of the minutes of the session. The report is as follows:

ELYRIA, OHIO, January 28, 1897.

At the last annual session of our association it was decided to meet in semi-annual session in Columbus, Ohio, some time during July. Shortly after that annual session it was announced that Buffalo, New York, had been selected as the meeting place of the United States Veterinary Medical Association, and your Secretary at once began receiving letters asking if our semi-annual meeting could not be changed to the same time and place. After consultation with your officers it was decided that it would be just and right to allow the members who had chosen Columbus to change it to Buffalo if they so saw fit; so your Secretary wrote to each member that had been present at the annual meeting, stating the requests, and asking their preference in reference to the proposed change. Only one vote was recorded against the change; so, with this authority, the call for the semi-annual meeting was made for Buffalo, New York, September 1, 2, and 3 We were present, and must confess ourself surprised at the small number of Ohio veterinarians present. It was one of the best meetings both socially and professionally it has ever been my pleasure to be present at. The papers read and discussed were not of the old stereotyped kind, but contained theory and fact for earnest consideration, while in social entertainment Buffalo veterinarians outdid themselves. It is unnecessary to enumerate these pleasures, so will simply say that the Ohio vets who missed that meeting, missed something out of the ordinary, and if present would never have regretted the loss of time and money.

Your Secretary has held this office since January, 1891, but finds that the past year has been his hardest to collect dues or receive answers to his letters; it seems to us that common courtesy to the profession, if nothing else, would prompt a member to answer a letter, but it seems not to.

The auditing committee of last year made an error of $10 in the Secretary's favor;

that error we will to-day rectify. We should be pleased to hear from any member his suggestions as to the collections of dues. WM. H. GRIBBLE, D.V.S., *Secretary.*

Dr. W. R. Howe gave the particulars in reference to the arrest and conviction of a so-called veterinary surgeon, prosecuted under the present veterinary law, and offered a resolution that was seconded by Dr. Hillock that Drs. Gribble and J. C. Meyer, Jr., be paid their actual expenses incurred in the prosecution of the above case. Carried. This of course brought on a discussion of the present law regulating the practice of veterinary medicine in Ohio, and it seemed to be almost the unanimous opinion of those present that this association should thoroughly test the law by prosecuting some veterinary graduate who had not passed the required examination.

A motion was offered by Dr. Howe, seconded by Dr. S. D. Myers, that the President appoint a committee of three to prosecute some graduate, and so make a test case, and that the association pay the necessary expenses of such committee. After a little heated argument *pro* and *con*, the motion prevailed. President Shepard appointed as the committee, Drs. W. R. Howe, S. D. Myers, and W. E. Wight.

Dr. S. D. Myers now read an interesting report of an outbreak of "Parasitic Bronchitis"* which occurred in his practice, and exhibited fresh specimens from the lungs of a lamb to illustrate his remarks. One specimen especially contained an enormous number of the strongyli. At the close of the discussion of this paper, being near midnight, the Chair appointed Drs. L. W. Carl, W. E. Wight and S. D. Myers as an auditing committee, when the meeting adjourned until 8:30 A. M.

JAN. 29, 1897.—Meeting called to order at 9:15 A. M., President Shepard in the chair. Roll-call was dispensed with. Treasurer Hillock rendered his annual report, after which the auditing committee offered the following:

COLUMBUS, OHIO, Jan. 29, 1897.

We, your committee appointed to audit the books of the Treasurer and Secretary, hereby submit the following: cash on hand last report, $295.54; receipts during the term, $28.00; expenditures, $47.10, leaving a balance in the treasury of $276.44.

L. W. CARL,
W. E. WIGHT, } *Committee.*
SIDNEY D. MYERS,

The Committee on Contagious Diseases had no report to offer, but each member of the committee spoke. Dr. Myers knew of no contagious disease in his locality. Dr. Shaw knew of tuberculosis and contagious ophthalmia of cattle. Dr. Carl knew of some glanders and had experimented a little with tuberculin. Ohio has practically no law in reference to tuberculosis.

---

* Published elsewhere in this issue.

The Committee on Veterinary Progress had prepared no report.

Dr. Shepard now introduced J. P. Adams, of Cleveland, President of the Master Horse-shoers Association, who read an exceedingly interesting paper on the relation of the horse-shoer to the veterinarian from a horse-shoer's standpoint.* The essay was followed by remarks on the same subject by Pat. Kearns, President of the Horse-shoers Association of Springfield. In the course of his remarks he said that in Springfield they had veterinary surgeons who demanded of the horse-shoers the shoeing of their horses for nothing, or else they worked against them. W. M. Brown, of Columbus, also spoke a few minutes. Discussion on the subject was opened by Dr. Howe. He wished horse-shoers and veterinarians did work a little more harmoniously; he had adopted the plan of always asking the owner of a lame horse who his blacksmith was, as that he considered was the owner's business, no matter what his personal opinion of the smith might be. Dr. Hillock thought Dr. Howe had covered the ground for him, but he must say he found smiths dabbling in veterinary medicine, floating teeth, etc., and it was this fact that greatly assisted in establishing bad feeling between smiths and veterinarians, but he thought that more harmony existed in Columbus than there used to be. Dr. Carl knew a smith who bragged largely about his own ability as a veterinary surgeon, and he had sent a horse to him to have bar-shoes put on, and this smith had refused to put them on. This same smith put a spring in the foot to cure a lame horse, when the real cause of trouble was a nail prick. Would be glad to see more harmony. Dr. Shaw was glad to see the course being taken by the horse-shoers; it should have been done long ago; he thought the better educated the smiths the more harmony. He employed a certain smith in Dayton to do his personal work; one day he sent a patron's horse to him to be shod. This horse had a quarter-crack clamped together, which the doctor was treating; the smith sold the owner a box of ointment that would grow the crack together, and the doctor lost a patient and the smith the doctor's work. Prof. White said he was glad to see that horse-shoers are waking up; he had attended a six months' course at the Royal Smithy at Dresden, and had imported about forty different shaped horse-shoes for use in different pathological conditions. He intended if possible to establish a course of horse-shoeing at the Ohio State University, and asked all veterinarians to co-operate with him. Mr. Adams in reply said he was pleased with the remarks made; all must remember that it was new ground; he thought his paper was the first of the kind ever read before a State veterinary association, and, while he would admit that man's actions are governed somewhat by self-interest, still there was more than that in this matter; it would benefit others. We must frown down rebates, tips to grooms, and such like, and raise the farrier's art to a higher plane. If a driver comes to me and orders a horse shod so and so, I shoe it just as he says, and if it's a failure that driver knows that he didn't know quite as much as he thought he did; while I have learned something. I learned the driver's plan was a failure. I do not consider that I compromise myself at all when I shoe a horse as the owner desires it done. One of the greatest injustices to legitimate trade is the department store; such as Siegel-Cooper Co., of Chicago, where a person can buy anything from a paper of pins to a steam engine, and he heard they intended adding a veterinarian and a farrier. He spoke of the teaching of horse-shoers at their local meetings. Dr. White asked if practical work was expected of the farriers association. Dr. Shepard said he was veterinary lecturer at the Cleveland horse-shoers meetings, and he found it hard work to prepare his lectures suitably, as there were no text-books, so he made diagrams and quizzed the members after the fashion of a school. Dr. Fair thought that the professor on shoeing at the American Veterinary College had a text-book. Mr. Adams said the National Horse-shoers Association now own *The Horse-shoer's Journal*, of Detroit, and used it as a medium of education.

---

* Will be printed in an early issue of the REVIEW.

Prof. White read a paper on the "Tuberculin Test," * which was one of the most concise and explanatory papers ever read before this association. The paper was well debated, all present being interested in the subject. The essayist said that old cows undoubtedly tubercular ofttimes did not react, even when tested two or three times.

Moved by Dr. Shaw, seconded by Dr. Derr, that a vote of thanks be tendered all essayists, and that the papers be handed the Secretary, who should have them published. Carried. President Shepard now asked: "Where shall we hold our semi-annual meeting?" Drs. Hillock and Howe named Cleveland. No other city being named, the motion was put to vote and declared carried. The semi-annual meeting will be held in Cleveland about July, at the call of the President.

---

* Will be published as soon as possible in the REVIEW.

On motion of Dr. Derr, the session adjourned.

Dr. T. B. Hillock invited the members to take dinner at his home, and such as could took advantage of the invitation, and spent a most enjoyable time until trains took them to their different homes. WM. H. GRIBBLE, D.V.S., *Secretary*.

THE VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY.

The thirteenth annual meeting of this association was held at the Continental Hotel, Newark, on April 8, 1897, and was called to order at 11.30 A. M., President Hawk in the chair. There were but 15 members present on calling the roll.

The minutes of the previous meeting were read and approved, as also were the minutes of a special meeting held on Dec. 22, 1896.

The Secretary's report showed a steady growth, and the Treasurer's report a rapid increase financially.

The Board of Censors reported favorably on the application of Dr. F. A. Zucker, of Elizabeth, who was unanimously elected a member.

The election of officers resulted in the unanimous election of President, Dr. W. H. Arrowsmith; First Vice-President, Dr. R. C. Vail; Second Vice-President, Dr. W. Runge; Secretary, Dr. S. Lockwood; Treasurer, Dr. B. F. King. Trustees—Doctors W. Runge, J. W. Hawk, A. W. Axford, W. Gall, and B. F. King, all being elected for two years.

The essayists being absent, Dr. Arrowsmith gave a description of an operation he had performed of laryngotomy for the removal of an osseous growth, which caused roaring, and he exhibited the electric lamp and instruments used. The operation was performed at his hospital, in Jersey City, and was successful.

The President, in his address to the association, emphasized the necessity of each member trying to improve the meetings by being more prompt at the time appointed, reporting interesting cases, inviting others of the profession to join the asssociation, and when the association is trying to get new laws passed not to leave all the work for the committee, but each one to see the member from his district and explain the need of such a measure; then when he sees the bill he will take an interest in it.

Adjourned at 1.15 for dinner. Reconvened at 2.45.

Dr. Dustan, Chairman of the Legislative Committee, made a report of the work of the committee, and of the defeat of the bill, after going to its third reading in the House. The bill was the same as the New York and Pennsylvania bills, providing for a State Board of Veterinary Examiners. The report was accepted and the committee discharged.

The Secretary read a letter from the Pasteur Monument Committee. Dr. Vail told of the action taken by the Pennsylvania Association, and moved that we give a like amount. Motion lost. Moved and carried to pass a subscription paper, and let each contribute what sum they desired. The Secretary was instructed to write to each member who was not present, giving all an opportunity to contribute.

The President appointed as delegates to the New York State and County Associations, Drs. W. Runge, R. C. Vail, and J. W. Hawk. To the Pennsylvania Association, Drs. F. A. Zucker, J. C. Dustan and William Gall.

Essayists for next meeting, Dr. W. Gall, Dr. W. Runge, Dr. A. D. Edwards, and Dr. B. F. King.

Moved and carried to meet at Trenton, N. J., in October. Adjourned at 5 P. M. S. LOCKWOOD, *Secretary.*

CHICAGO VETERINARY SOCIETY.

The April meeting was called to order on the 8th by the President, Dr. Walker. The minutes of the previous meeting were read and approved.

The President made some remarks as to the small attendance, there being only thirteen members present. He requested that the members try to attend earlier, as only ten were present at 9 o'clock, which number is not a quorum.

There was no report from the Secretary or Treasurer.

The Telephone Committee did not call on the telephone company, owing to the fact that it had come to their knowledge that the company would not consider our application for free telephone use of the slot machines at drug stores to call up our own homes or offices ; but that the company would consider such an application if made by the druggists. Dr. Walker, of the committee, reported that one druggist had promised to bring up the matter at the next meeting of the druggists. There were no applications for membership, and no unfinished business.

Dr. Gysel, the essayist of the evening, telephoned just previous to the meeting that owing to the illness of his wife, which was of a serious nature, he would not be able to attend to read his paper on "Operative Treatment of Quittor."

Under new business a letter was read from Dr. John W. Foster, offering his resignation to the society as he intended leaving Chicago to locate in Springfield, Ohio. Moved and seconded to accept this resignation.

A letter to Dr. A. H. Baker was read from Dr. D. E. Salmon, Chairman of the Pasteur Monument Fund, and Dr. Baker thought the letter should be considered by the society. Moved and seconded that as the communication was not addressed to the society that it be laid on the table ; and that the same be returned to Dr. Baker with an explanatory letter.

A very amusing card was shown the members by Dr. Robertson ; this card was printed and was the business card of a would-be veterinary surgeon, who guaranteed to cure among other affections "Cribbin" and "Thisaloe." He also called himself a "Veterianiary" Surgeon. It is a good sample of some of our Western quacks.

Dr. Walker mentioned the fact that our Honorable Governor Tanner has appointed for State Veterniarian one Charles P. Lovejoy, of Princeton, Ill., who is a non-graduate and a strong opposer of college qualifications. This appointment was made in the face of strong personal and written opposition to the governor by a large number of graduated veterinarians of the State of Illinois.

On motion, adjournment. L. CAMPBELL, *Secretary.*

ALUMNI ASSOCIATION OF THE AMER. VETERINARY COLLEGE.

The twentieth regular meeting of the Alumni Association of the American Veterinary College was held in the lecture-room of the college building, March 25th, 1897, at 3 o'clock P. M.

The meeting was called to order by President Howard, there being twenty-five members present. The most important business of the meeting was the report of the committee on the revision of the By-Laws and Constitution, and, after a long discussion by President Howard, Drs. Lowe, Hoskins, Pendry, Neher, and Prof. Hanson, the by-laws were accepted as read by the committee.

The society donated $25.00 towards the Pasteur Monument Fund.

It then had the pleasure of listening to the following address from the President, Dr. L. H. Howard :

Fellow Alumni :—The assembling to-day of our association in its twentieth annual reunion is an occasion worthy perhaps of more than passing notice.

The celebration of a twentieth anniversary of the organization of a brotherhood such as ours is one full of interest, and marks a point more or less prominent in its history.

Let us, therefore, at this twentieth milestone, look at the circumstances of our position, mark our progress for twenty years past, and, possibly, shape our course for another decade.

For twenty years we have been growing from the small beginning of a graduating class, few in numbers, but possessed of commendable enterprise, and to whom occurred this thought—that as our alma mater was already taking rank as one of the representative educational institutions of the country, the large numbers of its prospective graduates should be united, forming an association for the benefit, pleasure and profit alike of its own members, and of the institution to which all would owe their professional being.

Fostered in our early weak existence by the teaching faculty of the college, and encouraged by its interest in our behalf, strengthened yearly by the addition to our ranks of an increasing number of graduates, and among them many who have shown their ability and readiness to advance the best interests of the association, fortunate in being officered in many instances by men who have demonstrated in the history of veterinary medical associations of this country, their exceptional executive qualifications. We have gradually attained to a size, contemplation of which (600 members) inspires the thought "a powerful factor in the development of veterinary medicine."

Since that small beginning of ours, and during those twenty years which have elapsed, much of importance has occurred in the growth of veterinary science, and each year's record is certainly one of great progress. In some particulars the progress has been exceedingly rapid, and the graduate of twenty years ago, in keeping with the changing conditions, has rapidly advanced, until at the present time he finds himself to be not only the medically and surgically trained veterinarian in demand a decade ago, but, owing to the development in the public mind of an appreciation of the importance of the healthfulness of all animal products, he is in demand as the properly qualified person to inspect such products, the sanitary police officer, the protector of public health.

As a private worker and student in comparative medicine, in the various public official positions, as municipal health officer, as state veterinarian or member of state board having control of contagious diseases of animals, in the ranks of the great Bureau of Animal Industry, in the laboratory and in the field, the veterinarian has found his scope of usefulness gradually changing and enlarging, and the public demanding qualifications commensurate with its better knowledge of the wonderful evolution of medical science.

The veterinarian has not been found wanting, but is to-day to be found in every portion of our country doing the work expected of him, not only as I have before said as the well trained veterinarian skilled in the treatment of diseased animals, but as the worker in the relatively new science of prophylactic medicine.

Now, then, whether or not in the development of veterinary science in the past twenty years, whether or not in the advance made in comparative medicine purely, whether or not in the resulting growth in the number of institutions fitted for the training of the veterinary practitioner, the teacher of comparative medicine and the public health official, whether or not in filling all the many demands of the highest development of veterinary and comparative medicine, our alma mater has done its share, we have only to familiarize ourselves with the history of such development in this country to answer, we can truly say, its history is our history. Not only do we include in our ranks many men now well known and of high reputations in the great army of general practitioners, but a glance at the list of veterinarians connected with the educational institutions of the country, as organizers, teachers or directors, shows that many of them received their training within these walls. In the various state veterinary medical associations and in the national organization, our men have been prominently active and the workers to whom much of their success have been due. In official positions, municipal, state and national, many of our fellow alumni are to be found, who by their work are establishing a meritorious name for themselves and adding to the credit of their alma mater, besides returning to the people of their respective communities benefits not capable of being measured or calculated in their effect upon the future of the human race.

Therefore, on this, our twentieth anniversary, let us congratulate ourselves on our present situation, and the part we have played in whatever of improvement, progress or benefit, has come to our chosen profession since our organization twenty years ago.

To the eyes of some the field of usefulness of the practicing veterinarian of to-day seems to be becoming limited by the successful application to vehicles of motive power other than horses. The bicycle, electric street car and horseless vehicles of all descriptions are rapidly being brought to a high state of perfection, and the faster they develop the more threatening becomes the bugbear. To others, however, more optimistic, the prospects of continued employment in the future are as promising as they have ever been. According to the history of the human race in modern times, as civilization has advanced, so have multiplied the uses of man's great helper, the horse; and we are not going to do without him now any more than we could when substituting railway cars for stage coaches.

Be that as it may, the field of usefulness of the veterinarian as developing in comparative medicine relating to the protection of human health is one widening every year, and in which there is yet room for many and no end to the new truths possible to be evolved by able men. Comparative medicine and human medicine are closely related, and this fact is becoming recognized much more fully every year, and in due proportion is the aid of the veterinarian sought.

There is never an end to the wonders which science reveals, and the record of progress in things veterinary is to be continued for years to come. Original investigation, scientific research, experience made valuable to all by its interpretation by bright minds, the higher standard of matriculation, addition of courses of study, longer training and severe requisites for graduation of our educational institutions will all contribute to this end. As veterinary progress is assured, so is our progress as an association to be continued.

To-day we have added to our ranks a goodly number of the newest product of our alma mater. To these younger members —"fresh from the halls of learning"—we look for new inspiration, and imbued as they must be with love for alma mater, theirs is the duty to assist in conserving to her the good name and high reputation which has always been hers.

This closed the business of the day, to reconvene at the Hotel Marlborough to enjoy ourselves at the well-filled tables and listen to the many toasts. OTTO FAUST, *Secretary.*

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

We again remind members of this association who intend to read papers at the forthcoming meeting to indicate such intention to the Secretary, Dr. S. Stewart, 7½ South James Street, Kansas City, Kansas, without delay, and also furnish him, if possible, the title of their papers.

President Osgood has announced the appointment of the following State Secretaries:

Arizona, D. LeMay, Fort Grant; Arkansas, R. R. Dinwiddie, Fayetteville; California, W. F. Egan, 1117 Golden Gate Avenue, San Francisco; Colorado, E. Pouppirt, Duff; Massachusetts, W. L. LaBaw, 58 Village Street, Boston; New Hampshire, L. Pope, Jr., Portsmouth; Connecticut, R. P. Lyman, 328 Asylum Street, Hartford; Maine, Wm. S. Lord, U. S. Hotel, Portland; Rhode Island, Walter L. Burt, 26 Tabor Avenue, Providence; Vermont, ——— ; New York, J. Faust, 209 Union Street, Poughkeepsie; New Jersey, D. J. Dixon, 366 Washington Street, Hoboken; Pennsylvania, S. J. J. Harger, 205 N. 20th Street, Philadelphia; Delaware, H. P. Eves, 507 W. 9th Street, Wilmington; Maryland, Wm. Dougherty, 1035 Cathedral Street, Baltimore; Virginia, J. P. Turner, Fort Meyer; North Carolina, F. P. Williamson, 122 W. Hargut Street, Raleigh; South Carolina, Benj. McInnis, Charlestown; Georgia, ———; Florida, ———; Alabama, C. A. Carey, Auburn; Mississippi, T. S. Butler, Agricultural College, Miss.; Louisiana, W. H. Dalrymple, 207 N. Boulevard, Baton Rouge; Texas, G. E. Griffin, Ft. Sam Houston, San Antonio; Ohio, W. H. Gribble, Washington Court House; Indiana, T. J. Turner, Indianapolis, care Kingman & Co.; Michigan, S. Brenton, Detroit; Wisconsin, G. E. Leach, 150 7th Street, Milwaukee; Illinois, R. P. Steddon, Galesburg; Kentucky, John Garsel, 19 E. 11th Street, Covington; West Virginia, L. N. Reefer, 1406 Chaplin Street, Wheeling; District of Columbia, J. H. Adamson; Tennessee, W. C. Rayen, 529 Broad Street, Nashville; Iowa, G. A. Johnson, City Building, Sioux City; Minnesota, M. H. Reynolds, St. Anthony Park; Washington, S. B. Nelson, Pullman; Idaho, ———; Nevada, ———; North Dakota, T. D. Hinebauch; South Dakota, M. J. Treacy, Fort Mead; Utah, Paul Fischer, Logan; Montana, M. E. Knowles, Butte; Oregon, ———; N. S. Mayo, Manhattan; Missouri, J. M. Phillips, 3466 Eastern Avenue, St. Louis; Nebraska, A. T. Peters, Lincoln, Experiment Station.

"THE BICYCLE will drive out the horse when the cash-register drives out the piano," is John Splan's latest centre-shot. This one is worthy of preservation for its aptness of illustration.—(*Breeders' Gazette.*)

COLLEGE COMMENCEMENTS.

NEW YORK COLLEGE OF VETERINARY SURGEONS.

The commencement exercises of the New York College of Veterinary Surgeons were held the evening of April 1st at the College Hall, 154 East 57th Street, where the President, Dr. Hermann M. Biggs, conferred the oath of Hippocrates and awarded diplomas to the following gentlemen: Frederick Lincoln Bodwell, New Hampshire; James Burns, New Jersey; William Eckl, New York; Albert Burton Hecker, New York; Alfred Mason Heard, New York; John Burtis Jones, New Jersey; John Sayres Jones, New York; Elmer Heaton Judkins, New York; Alfred Josiah Pitcher, New York; Charles Frederick Spies, New Jersey; Joseph Charles Saile, New York; Edward Kirk Stretch, New Jersey; Frank Perley Sturges, Massachusetts; Thomas Emmet Smith, New Jersey; Harry Quincy Thompson, Maine.

Later a supper was served at the Hotel Marlborough, and the following toasts were responded to: "N. Y. College of Veterinary Surgeons," Herman M. Biggs, M.D.; "Class of '97," Albert B. Hecker, V.S.; "Comparative Medicines," John H. Huddleston, M.D.; "The Alumni," James H. Ferster, V.S.; "Our Past and Future," Thomas E. Smith, V.S.; "Professional Ethics," Rush Shippen Huidekoper, M.D., V.S.; "Veterinary Societies and Press," W. Horace Hoskins, D.V.S.; "Farewell Greeting," Frank P. Sturges, V.S. Fred L. Bodwell, V.S., as Toast Master.

The medals and prizes were awarded as follows: For general proficiency (gold medal), Frank Perley Sturges; for best junior examinations (silver medal), William Malcolm P. MacKellar; for best practical examination (pocket case of instruments), Thomas Emmet Smith; Dr. Giffen's clinical prize awarded to Harry Quincy Thompson. Edward K. Stretch, V.S., Harry Q. Thompson, V.S., Henry W. Dustan, James M. Richardson, Chester R. Perkins and Francis Edmonds received honorable mention.

ONTARIO VETERINARY COLLEGE.

At the closing exercises of this college, which took place in Toronto, March 26, Prof. Andrew Smith presided, and the platform was occupied by the faculty and members of the Board of Examiners (practitioners of Canada and the United States). The graduating class presented the Principal with a picture of the class. The college diploma was presented to the following graduates:

E. L. Bertram, Straustown, Pa., U. S.; George C. Bowen, Newark, N. J., U. S.; Wallace P. B. Brennan, Parkhurst, P. Quebec; Frank W. Bryant, Sunderland, Ont.; Clinton H. Bugbee, Keene, N. H., U. S.; Henry Buss, Deansville, N. Y., U. S.; Wallace Caister, Tavistock, Ont.; George R. Caldwell, Ashton, R. I., U. S.; John B. Campbell, Grandin, N. Dak., U. S.; Herbert B. Chaney, Akron, Ohio, U. S.; Robert C. Cliff, Hamilton, Ont.; T. J. Cooper, Lockport, N. Y., U. S.; W. R. Cross, Beeton, Ont.; Clarence W. Clark, New Britain, Conn., U. S.; Wilson S. Decker, Scranton, Pa., U. S.; John Dodd, Glasgow, Scotland; James A. Durkin, London, Ont.; Thomas A. Ewart, Wyoming, Ont.; W. H. Erwin, Mason, Mich., U. S.; Robert J. Farley, Toronto, Ont.; Andrew L. Fosse, Deerfield, Wis., U. S.; George J. Grange, Guelph, Ont.; George Hilton, Winnipeg, Man.; Fred. R. Hodgson, Forest, Ont.; Fred. A. Hoskin, Forest, Ont.; Charles S. Horne, Walnut Grove, Miss., U. S.; John N. Johnston, Peterborough, Ont.; Fred. Kemmer, Connersville, Ind., U. S.; Newton A. Kippen, Tiverton, Ont.; John J. Lindner, Canandaigua, N. Y., U. S.; W. Frederick McElroy, Bewdley, Ont.; William O. McHugh, Bridgeport, Ohio, U. S.; G. A. McKenzie, Deloraine, Man.; D. J. McKillop, Bristol, P. Quebec; John A. McKinnon, Sonya, Ont.; Alfred A. McLachlan, St. John's, Newfoundland; W. McCorkindale, Toronto, Ont.; C. S. Macdonald, Toronto, Ont.; Rudolph J. Marshall, Hoosick Falls, N. Y., U. S.; Wilfred J. Meloche, Ogdensburg, N. Y., U. S.; Walter D. Monk, South March, Ont.; Alfred J. Nelson, Stonghton, Wis., U. S.; Isaac S. Norton, Marshall, Minn., U. S.; Robert D. Orr, Baden, Ont.; Thomas M. Owen, Gaithersburg, Maryland, U. S.; Jesse H. Pierce, Smithfield, Pa., U. S.; Chas. A. Prouty, Putney, Vermont, U. S.; George S. Price, Fenwick, Ont.; Howard F. Pegan, Cochranton, Pa., U. S.; W. W. Richards, San Diego, Cal., U. S.; J. R. F. Rochester, Denton, Maryland, U. S.; G. Venour Rowcroft, Birtle, Man.; Andrew Seim, Ayton, Ont.; D. K. Smith, Toronto, Ont.; Lyndon S. Smith, Cornish, N. H., U. S.; George P. Statter, Sioux City, Iowa, U. S.; Jasper J. Smart, Sherborn, Mass., U. S.; Charles E. Taylor, Sawyerville, P. Quebec; A. E. Tweedie, Ivanhoe, Ont.; J. Eugene Underhill, Middletown, Conn., U. S.; Charles E. Virtue, Mt. Gilead, Ohio, U. S.; William H. Wheeler, Stamford, N. Y., U. S.; John W. Will, Petrolia, Ont.; J. A. H. Winsloe, Buffalo, N. Dak., U. S.

UNITED STATES COLLEGE OF VETERINARY SURGEONS.

The commencement exercises of this college were held April 15th, at 4 o'clock, in the lecture hall of the college. The President announced the resignation of one of the trustees and the appointment of the Hon. J. H. Brigham, Assistant Secretary of Agriculture, to fill the vacancy.

The degree of fellowship was conferred on Professor D. S. Lamb, of this city, and Dr. C. H. Ford, of New Orleans. The Dean of the college, Professor C. Barnwell Robinson, then introduced Hon. J. H. Brigham, of Ohio, who, with an appropriate address, presented diplomas. The degree of D.V.S. was conferred upon Webster Clay Langdon, of Fargo, N. D.; William B. Elliott, V.S., of Riverside, Cal., and William E. Yelton, of Washington, D. C. Dr. D. S. Lamb, representing the faculty, in an address showed the growth of veterinary science and its relation to its sister science and to public health. Mr. Langdon, as valedictorian of the class, gave an outline of the course, how it differs from that of many other schools.

Professor Prevost, on behalf of the trustees, showed the close relation between students and professors, and closed with the motto of the college, *Vestigia Nulla Retrorsum.*

KANSAS CITY VETERINARY COLLEGE.

In the closing exercises of this institution, which occurred on Wednesday, March 31, at 8:30 P. M., at the Savoy Hotel, Kansas City, a departure was made from the time-honored method, and Dean Stewart writes : "I am glad to truthfully say to you we think it a most pleasing manner of conducting the graduating exercises, permitting of the expression of appreciation of the merits and purposes of our profession on the part of instructors, graduates and guests, also conducing to good fellowship and fraternity. Part of the faculty is M. D., and this banquet afforded an opportunity for them to become acquainted with their veterinary coworkers. As you see, our class was small, all present (about 50) were in a happy mood, the speeches were felicitous, and closer fellowship, with pleasant remembrances, is the outcome."

Prof. C. J. Seiler presented the college diploma to the following graduates : George R. Conrad, Robert B. Leeper, James M. Moore, Frank A. Pouppirt, and John B. Wright.

The class response was by Dr. R. B. Leeper. The toasts were responded to as follows : "Kansas City Veterinary College," Dr. S. Stewart; "My Friend, the Quack," Dr. S. L. Brooking; "The Veterinarian and the Microsope," Dr. L. E.

Lutz; "Medical and Veterinary Profession," Dr. L. Rosenwald; "The Veterinarian under Cross-Examination," Frank Sheridan, Esq.; "The Veterinarian as a Quarantine Officer," Hon. Albert Dean; "The Veterinarian's Place in Society," Dr. R. H. Harrison, Atchison, Kansas.

INDIANA VETERINARY COLLEGE.

The commencement exercises of this college were held at the College building on Friday afternoon, March 26th, and consisted of addresses by Dr. Thos. Gaddes, Dr. L. G. Greiner, Secretary of the College, Dr. E. H. Pritchard, and Dr. F. A. Mueller, after which Dr. T. L. Armstrong awarded diplomas to the following: Clarkson Gause, Carthage, Ind.; David Waugh, Pittsburg, Pa., and Robt. Harper, Indianapolis, Ind. After the exercises the graduates met and an Alumni Association was organized, and the following officers elected: Thos. Gaddes, M.D., V.S., President; Jos. Creedon, V.S., Vice-President; L. G. Greiner, V.S., Secretary, and F. A. Mueller, Ph. G., V.S., Treasurer. The following were elected trustees: Dr. Harry Smock, Franklin, Ind.; Dr. Wilbur Ramsey, Middletown, Ind.; S. Rodibaugh, New Augusta, Ind.; Dr. Clark Gause, Carthage, Ind.; Dr. J. B. Heaton, Bloomfield, Ind. These to serve for one and two years respectively. It was agreed to call a meeting of the alumni in July to complete arrangements.

MCKILLIP VETERINARY COLLEGE.

The commencement exercises of this college were held in Assembly Hall, March 31, at 8 o'clock P. M. The invocation was offered by Rev. Dr. Staff, followed by an address by the acting Dean, Dr. Schoenleber. The salutatory was delivered by E. Merillat, of the graduating class, after which the class poem was read by W. S. Powell and the class prophesy by S. H. Caldwell. After a valedictory address by E. H. Brown, President McKillip conferred the college degree upon the following ten graduates: E. H. Brown, Hawarden, Iowa; J. B. Boomer, Chicago, Ill.; H. O. Davis, Chicago, Ill.; J. H. Crawford, Racine, Wis.; O. R. Dubia, Chicago, Ill.; Charles N. Ferrier, Jamestown, N. D.; E. Merillat, Toledo, Ohio; W. S. Powell, Sparta, Wis.; S. H. Caldwell, Montgomery, Ala.; G. S. Tyner, Paradise, Ind.

Interesting short addresses were then indulged in by Drs. Reading, Rumpf, Merrillat, Thruiliman, McKillip and McMahon.

OBITUARY.

JOHN R. HART, V. M. D.

With much regret the REVIEW is called upon to announce the death of this earnest and well-known veterinarian, which occurred at the German Hospital, Philadelphia, shortly after 1 o'clock, Monday afternoon, March 29th, whither he had been removed suffering from acute appendicitis, with the hope that an operation might save his useful life, but his strength ebbed so rapidly that the surgeons deemed that procedure unwise. He became unconscious at 8 A. M. of the morning on which he died, and remained in that condition until the end. While not well for two or three weeks prior, he did not take to his bed until the Thursday previous to his death, and grew rapidly worse, as described.

Few members of the veterinary profession were better known or held in greater esteem than Dr. Hart, who was in every sense a self-made man. He was born May 9, 1849, at Hampton, N. J., but removed to Philadelphia at a tender age. He studied with a practitioner of that city, and was for a number of years actively engaged in the practice of the profession which he loved so well. Being of a very studious temperament, and scrupulously honorable, he was not content with his position in medicine, and, although the head of a large family, in possession of a lucrative business, and well advanced in years, he became a student at the University of Pennsylvania, from which he took his degree. For a great many years, and until his death, he was city veterinarian of Philadelphia, having charge of the horses of the Police and Fire departments, and it was through his exertions that the admirable City Veterinary Hospital was erected.

Dr. Hart took a great interest in association work, and was a member and officer in most of those to which he was eligible, being President of the Keystone, Treasurer of the Pennsylvania State, and an enthusiastic member of the Committee on Army Legislation of the United States. In our report of the last meeting of the last-named association we drew attention to the extreme earnestness of the deceased in his desire to secure the passage of the Army Bill, pledging his own private purse to defray the necessary expenses in pushing the measure in case the association failed to make the necessary appropriation. At the last meeting of the Pennsylvania Association, at which he was re-elected Treasurer, he read a paper on "Azoturia," the first installment of which was printed in the April REVIEW, and which is completed in this number. One of the last acts which he performed was the revision of our proofs of this article, and, as he explained in a private letter, it is a subject to which he has devoted many years of study, and the article itself well betrays his earnest application.

The profession can ill afford to lose so valuable a member, and to his bereaved family, consisting of a widow and ten children, their heartfelt sympathy is extended. He was a brother of Walter R. Hart, D. V. S., a graduate of the American Veterinary College, who is also a prominent practitioner and association worker.

LUCIAN T. BELL, M. D., V. S.

The death of this well-known veterinarian occurred at his residence, 331 Putnam Avenue, Brooklyn, N. Y., on Friday morning, April 23d. He was born near Staunton, Virginia, May 18, 1850, and consequently would have been 47 years old this month. He received his early education in the schools of his native county, and when nineteen years of age entered the old New York College of Veterinary Surgeons, then located at 205 Lexington Avenue. There was at that time a class of four students and but few graduated veterinary surgeons in the United States. He received his degree in 1871, before he had reached his majority, and returned to his native State; but there was but little appreciation of veterinary medicine in the South in those days, and he soon found his way back to New York City, locating in the Yorkville section. When the American Veterinary College was established in 1875 he became identified with it and lectured and quizzed in various branches, taking his second diploma there in 1876, as did many of the former graduates of the old college. About this time he removed to Brooklyn, where he has practiced ever since, being, we think, the oldest graduated practitioner in that city at the time of his death. He was always persistent in his quest for knowledge, and to better prepare himself for his veterinary career he entered the Long Island Medical College, graduating in 1880. When the Federal Government, through General Patrick, inaugurated the first crusade against contagious pleuro-pneumonia of cattle, about 1876, Dr. Bell was one of his most trusted lieutenants, and when the present Bureau of Animal Industry began operations against the same disease in 1887 he was appointed the chief inspector for Long Island, continuing with the Bureau until the Harrison administration. He was appointed veterinarian to the Brooklyn Board of Health in 1885 and held that position until 1893. During all this time he enjoyed a large and select practice and had erected a model sanitarium at 358 South Second Street, Brooklyn, E. D. In the early days of his career he took much interest in the small veterinary medical associations which struggled for an existence, having been a member of the U. S. V. M. A., the New York State, and others, but latterly they failed to attract him. Most of his energies outside of his practice were thrown into the Masonic fraternity, he having been a 32d degree member of that order, and prominent in various capacities. He was also a member of the Kings County Medical Society. He leaves a widow and four small children.

He was a brother of Roscoe R. Bell, D. V. S., one of the editors of the REVIEW.

JOHN DORIS, JR., D. V. S., a graduate of the Ohio Veterinary College, class of '92, and a practitioner of Pittsburgh, Pa., died on March 5, of pleurisy. He was for three years inspector for the Bureau of Animal Industry, stationed at Pittsburgh, and was a member of the Pennsylvania State Veterinary Medical Association.

DANIEL WALSH, one of the oldest non-graduated veterinarians of Philadelphia, died on March 1st.

NEWS AND ITEMS.

DR. WILFRED LELLMAN, of New York City, was married to Miss Gertrude Runge, of Stettin, Germany, on January 30.

DUMB RABIES has been quite prevalent in some parts of Brooklyn. Dr. Bell had six cases in his practice within two weeks.

PROF. M. C. BAKER, of Magill University, Montreal, has been quite ill with pneumonia, but is, we are glad to learn, convalescing.

PROF. LEONARD PEARSON has, we understand, withdrawn as one of the editors and publishers of the *Veterinary Magazine* of Philadelphia.

A MILKING MALE-GOAT.—A breeder in Saxony possesses a male-goat which gives so much milk that he has to be milked three times a day.

VETERINARIANS in many cities of the United States are delivering lectures to horse-shoers on the anatomy and physiology of the horse's foot.

THE FIRST CANINE AMBULANCE, in connection with a veterinary hospital, which we have heard of is that of Dr. Leavy, of New York City, which he has lately placed in service.

DR. W. J. HINMAN, of Manitoba, who made so many friends at the Buffalo meeting of the U. S. V. M. A., where he became a member, has just returned from a short trip to England.

DR. REYNOLDS MARRIED.—On March 31, Dr. Myron Herbert Reynolds, recently appointed State Veterinarian of Minnesota, was married to Miss May Isabelle Shaw, of St. Paul, Minn.

A DESERVED REWARD.—Prof. Nocard, of the Alfort Veterinary School, has received from the Academy of Medicine the prize known as La Coze's prize for his investigations and publications on tuberculosis. The prize is 10,000 francs ($2000).

AGAINST CATTLE PLAGUE.—It is reported that Prof. Koch has found a means to immunize cattle against cattle plague. The immunity lasts only fifteen days. The learned professor hopes by this mean to prevent easily the spreading of the disease.

DR. GEORGE B. JOBSON, veterinary surgeon, has just been elected Mayor of Franklin, Pa. He is a worthy member of the Pennsylvania State Veterinary Medical Association, and his fellow-members are very proud of the distinguished honor conferred upon him by his constituents.

DR. W. H. HARBAUGH, of Richmond, Va., who has just recovered from an attack of the grip, is preparing a paper on milk, including much practical work on tests and analysis of the Richmond supply, to be read at the annual meeting of the Virginia State Veterinary Medical Association, June 23d.

VACCINATION AGAINST PNEUMO-ENTERITIS OF THE PIG.—The laboratory of Prof. Perroncito furnishes a vaccine against pneumo-enteritis of the pig. Vaccinations made by a great many have given excellent results. The vaccine is sent in liquid form in bottles containing three doses at a charge of five cents a dose. Address Prof. Perroncito, via Nizza, 52, Turin.

VETERINARY STATISTICS OF THE PRUSSIAN ARMY.—In 1895 there were 27,331 out of an effective of 76,771 horses,—among which 1056 died, 316 were reformed and 263 destroyed. There were observed 10 cases of glanders, 1 of anthrax, 1407 of infectious pneumonia, with 60 deaths; 905 cases of typhoid fever, with 1 death only; 183 cases of distemper, with 1 death. There were 3509 cases of colics, 2655 of diseases of the feet, and 368 fractures.

TUBERCULOSIS IN PRUSSIA.—The statistics of the infected slaughter-houses show for the year 1895 a total of 662,164 bovines killed. Out of this number 84,463, about 12.7 per cent., were tuberculous. In calves (less than six weeks old) 2266 were found tuberculous out of 972,500 killed. In pigs 35,508 were tuberculous out of 2,630,841 killed. In two years the proportion of tuberculosis has increased by one-third in bovines; it has doubled in pigs.

CYNOPHAGY IN TUNISIA.—Dr. Berthelon has studied the customs of the various races in Tunisia and made observations upon one of the most curious customs of those inhabitants. It seems that from Gabes to the frontiers of Algeria, dogs are eaten, notwithstanding the directions of the Koran, which prohibit the use of carnivorous meat. To excuse this violation of the religious law, Tunisians from the oasis claim that this meat protects them from fever.

DR. W. H. DALRYMPLE, of Louisiana, who takes a great interest in the U. S. V. M. A., says there cannot be two opinions as to the advisability of establishing section work in that organization. The every-day practitioner should feel that he will hear something that will benefit him; the sanitarian will be sure to find plenty to interest him. Let others give expression to their opinions, and let the association consider the subject very thoughtfully at Nashville.

ROBERT F. KNEEBS, the American horse owner convicted of "ringing" in Germany, was released from prison on Apri 15th, in Berlin. Seven months of his time was deducted from the sentence in view of the fact that he had already been in prison for that period. The trotting mare Bethel or Nellie Kneebs, which was seized when Kneebs was arrested, will be sold by the Government at public auction. The lowest bid which will be admitted is 15,000 marks.

RECENT APPOINTMENTS IN THE B. A. I.—The following appointments have been recently made in the Bureau of Animal Industry: Dr. G. A. Johnson, of Sioux City, Ia.; Dr. R. P. Steddom, of Galesburg, Ill.; Dr. W. A. Heck, of Keokuk, Ia. They took the civil service examination in February, and have been appointed meat inspectors and detailed for duty at Kansas City. Dr. L. E. Day, of Kansas City, was successful in the same examination, and is now stationed in Chicago.

"SPOILS" SYSTEM IN ILLINOIS.—Governor Tanner, of Illinois, has appointed a non-graduate, Charles P. Lovejoy, of Princeton, to the position of State Veterinarian, in the face of the united opposition of the graduated members of the profession. It is stated that the new appointee is not only lacking in qualification himself, but derides higher education in the veterinarian. Verily, the road to our glorious consummation is strewn with the thorns of ignorance and petty politics.

IN PENNSYLVANIA, as in New York, it is being sought by legislative enactment, to reopen the registration books, which closed there in 1889, for the purpose of registering quacks who have been in practice ten years or more. Our brethren in the Keystone State must be alert and send to the committee to which the bill has been referred such an avalanche of disapproval and denunciation as will effectually bury it; and they should allow their righteous indignation to be so pointed against the proposer of such an infamous measure that no other member will have the temerity to so offend the honorable body of men who compose the profession of veterinary medicine in the great State of Pennsylvania.

THE B. A. I. IN TENNESSEE.—The following is taken from a Memphis paper of recent date: "There is a very vigorous effort being made to establish in this city a branch office of the Bureau of Animal Industry of the Government, the office of which is to examine the cattle that are daily shipped through Memphis. This branch is particularly needed here, because this city is a point where cattle from the infected districts are shipped through on the way north, and the location of the office at Nashville is therefore of no benefit. Dr. J. W. Scheibler is being recommended for the position of inspector in case the branch is established, and his experience and standing particularly fit him for the position."

A SOCIAL HONOR.—Dr. William Herbert Lowe, of Paterson, N. J., former United States Veterinary Officer of the Port of New York, has been elected a member of the Hamilton Club, of Paterson, N. J., an exclusive social club of the highest standing, numbering among its members Vice-President Hobart, Hon. John W. Griggs, Governor of New Jersey, and many prominent men in the different walks of life. The club is now building an extensive and elaborate new home, costing in the neighborhood of $80,000 within half a block of Dr. Lowe's veterinary hospital, in the city of Paterson, and when completed, it is said, will be the finest club house in the State. Dr. Lowe deserves congratulation upon his election to membership, as several prominent and wealthy men have recently been "blackballed." The doctor has "balled" many horses, but all who know him know that when it comes to the matter of balling a man, he would prefer to be excused.

HONORS EASY.—The following inquiry and answer recently appeared in the "Veterinary Department" of one of our turf papers: "I have a mare that ran away to-day and fractured her under jaw. She is a good one and I would like to save her if possible. Will you kindly tell me how to treat her.—M. H. D. *Answer.*—Place the jaw in a sling; this can be done by fixing a broad bandage around the mare, thus holding the mouth closed. Feed upon gruel for a week, and she will recover." If the inquirer can secure any clearer conception of the answer than the editor could of his inquiry, he will have the advantage of the editor. Just how the latter expects a bandage around the mare to be of service in the emergency is not shown.

DR. SCHEIBLER STATE VETERINARIAN FOR TENNESSEE.—Dr. J. W. Scheibler, of Memphis, was yesterday elected State Veterinarian by the State Board of Health to succeed Dr. W. C. Rayen, of Nashville. Dr. Scheibler is one of the most eminent veterinarians of the entire South. He graduated from the American Veterinary College, of New York city, in March, 1885, and served as house surgeon of that institution until March of the following year. He then returned to Memphis, where he has since practiced his profession. As Dr. Scheibler is right on the State line he will be able to deal effectively with the Texas fever, which disease the State Board of Health is making a strong effort to stamp out.—(*Memphis Exchange.*)

NEW YORK STATE MEDICAL SOCIETY AND THE STATE VETERINARIAN.—Apropos of the bill to create the office of State Veterinarian, and a subsequent bill to take all diseases of domestic animals out of the hands of the State Board of Health and place them under the Commissioner of Agriculture, the following resolution of the New York State Medical Society will show the sentiments of its members in relation thereto: "It is the opinion of this society that the State Board of Health should be permitted to make such regulations under the law as will provide for the proper inspection of suspected cattle and for the destruction of diseased animals, and especially that the services of a competent pathologist should be employed whenever such seem essential to the conduct of the service; but that we are not in favor of placing this important duty in the hands of a State Veterinarian, except he be under the absolute control of the State Board of Health with reference to appointment, duties and salary."

An Artificial Anus, with Double Opening, following Cauterization of an Exomphalus with Nitric Acid [*By N. Canac*].—The subject of this report was a four-year-old mare, rather of a wild disposition, which had, when young, a very small umbilical hernia; but one day, after very hard work, where a great deal of violent effort was demanded of her, she stretched her hernia to such an extent that it became as large as a turkey's egg, was painful and incompletely reducible. The owner desiring it treated, the author decided to have recourse to the application of nitric acid, which was done with all the necessary precautions. At first the condition of the patient seemed to indicate a favorable result, when on the fifth day following the cauterization, a deep wound was observed in the centre of the tumor, and twenty-four hours after evidence of intestinal perforation could no longer be doubted. The treatment recommended was that of Cadeac,—viz., the promoting of a vigorous development in the granulations of the edges of the fistulous tract by the application of coatings of tincture of aloes, in combination with that of a severe blister over the parts. After twenty or twenty-five days of treatment the recovery was complete.—(*Revue Veterinaire.*)

ASSISTANTSHIP WANTED.

By a young graduate from Alfort (France), having two years of practice and speaking English a little, a situation as assistant. He specially desires to improve himself in the English language, and would be satisfied with a moderate salary. H. Gaillot, Veterinaire, Chartres, Eure et Loir, France.

BACK NUMBERS OF REVIEW.

I want Review of March, 1895. Will pay regular price. I will dispose of January, and March, 1892, and June, 1896. Address L. D. LeGear, V. S., 201 W. 6th st., Austin, Texas.

Prof. W. L. Williams, of New York State Veterinary College, Cornell University, Ithaca, N. Y., will pay 50 cents each for Nos. 5 and 7 of Vol XIX.

Dr. W. B. Welsch, of Marshall, Mo., will pay 50 cents for No. 12 of Vol. XIX.

The editors will pay 50 cents for Nos. 5, 7 and 12 of Vol. XIX.

PRACTICE FOR SALE.

A good paying practice, located in Brooklyn, on leading avenue (with or without two-story house and hospital), all modern improvements and facilities. Good stand for young practitioner looking for a good opening. For particulars, apply to F. A. Anderson, Attorney, Eagle Building, Brooklyn, N.Y.

AMERICAN VETERINARY REVIEW.

JUNE, 1897.

EDITORIAL.

SIGNS OF THE TIMES.

The REVIEW prefers to be conservative and deliberate rather than optimistic and precipitate in the formation of judgment upon great events; it prefers to view the dark side of questions by the light radiating from the bright side; it elects to formulate a calm estimate rather than a snap conclusion. But unless our eyes are totally devoid of prophetic vision, our mind dimmed by the recent long years of dejection by the constant contraction of the sphere of the veterinarian as a practitioner, as the physician to the sick and the halt, there is a wave starting at the fountainhead which will gradually enlarge and become more powerful as it flows on towards its destination—veterinary prosperity. We have on many occasions referred to the depression in the practice of veterinary medicine, and in every instance have insisted that we were but bearing our proportionate amount of the universal stagnation; that the prehistoric companion and servant of man, the horse, immortalized in the literature and life of every land where the sun gives forth its effulgence—more grand, more noble, more beautiful, more fleet, more intelligent now than ever in the history of the world—was to go into decadence at the end of the nineteenth century before the inventions of man, who has brought forth the inanimate progression of two self-propelled wheels, or the cumbersome and thus-far unmanageable auto-mobile vehicle, was too preposterous to gain the serious contemplation of thoughtful men. It is a part of the life of good men and women to love their fellow-creatures, and in proportion to the intelligence, the usefulness, and the fidelity of those creatures the meed of affection is displayed, and more abundantly returned than it is received. This link of love will ever preclude the possibility of discarding them from performing their proper duties of labor, of usefulness, of pleasure, of companionship. However wonderfully man may perfect machines to be propelled by any form of motive power, they will never supersede the soliped as a means of pleasure progression; and if the inanimate propeller ever attains a state of utility sufficiently perfect to be of service in the realms of business, in greater proportion will the horse find his proper godgiven sphere before our pleasure carriages and under the saddle. No true friend of the horse ever felt other than thankful when electricity took his place upon our street cars in the cities; he had been bred in the coarsest mould in order to cheapen his price, and his life was a continual drudgery and disgrace to his noble race. The horse, as a race, therefore, will be greatly benefitted by the cessation in rearing such nondescripts. Anyone who seriously believes that the bicycle will make any prolonged opposition to the horse for pleasure must argue the question from the standpoint of a pessimist and not from sound reasoning.

A correspondent of the REVIEW—whose opinion on other subjects we very highly esteem—gives a very alarming view of the situation, and whose article is in a measure the occasion of these remarks. He quotes what he terms the following significant figures: Loss in horses and livery for the past year, $20,000,000; loss to pleasure vehicles, $15,000,000; loss in harness and saddles, $10,000,000. He takes his inspiration from "a New York journal of recent date," which journal is probable catering to a bicycle-reading public. From what journal or from what source can any estimate be made? It is a guess, and the wish is father to the estimate. Even if the figures were correct, would the loss be attributable solely or in small part to the bicycle? Every branch of business—manufacturing, the trades, arts, sciences, and even capital—has suffered to such an extent that an estimate of the losses is not possible. Why not add the losses in every industry together for the past four years and place them all to the account of the all-absorbing and all-conquering hump-backed bicycle?

As the general financial and commercial horizon clears, and prosperity again smiles on this great country, which it is as certain to do as the bicycle as a craze is to subside, the horse and his friends (and their name is legion) will participate as grandly in the good times as they ever did. Already the demand for well-bred animals is increasing, prices are as high for quality as they have been for years, and they will steadily advance with a return of the feeling that the country has emerged from the chaotic state in which it has existed for the past four years.

ILLINOIS VETERINARIANS UP IN ARMS.

There is nothing surprising about the action of the Chicago Veterinary Society at its special meeting in April and at its regular May session, as the profession of Illinois generally, and of Chicago in particular, has been submitted to the most humiliating insults both by the Governor of the State and the authorities of the Windy City that could be offered to a body of earnest men struggling for the good of a noble profession and for the benefit of mankind. The affront is no greater to the veterinarians of Chicago than it is to the members of the profession throughout the State, so far as the action of Governor Tanner is concerned, but the Society, being composed of energetic and earnest men, and meeting at frequent intervals, has undertaken to champion the cause of their less fortunate brethren, until such time as it too can take up the cudgel against the common enemy, the politician. Nor is this disgraceful proceeding a State matter only, but it concerns every graduated member of the profession of veterinary medicine throughout the country and throughout the English-speaking world. We made notice in the May REVIEW of the appointment by the Governor of the State in question of a non-graduate to the very important position of State Veterinarian. Not only was he objectionable for this reason, but he was described as a man opposed to the higher education of the veterinarian. This appointment was made in the face of the earnest protest of the united legitimate profession of the State. As if to add insult to injury, the heads of the departments of police and fire of the city of Chicago have followed in the footsteps of the Governor, ignoring, as did he, the protests of the regular members, and have placed the animals of their departments under the charge of a non-graduate. We direct the attention of our readers to the reports of the last two meetings of the Chicago Veterinary Society, printed elsewhere in this issue, and commend most highly their laudable efforts to checkmate the pernicious influences that are maintaining in that State. Especially do we applaud the action of Drs. Hughes and Ryan in resigning their positions of Assistant State Veterinarians and their refusal to be connected in any way with the office under such conditions.

The entire profession of the State should stand as a unit in support of the position taken by the local society against such a high-handed disregard of the progress of civilization and the countenancing of such an exhibition of brigandage; they should employ the most effective means to combat the baneful influences which are running rampant in the political policies of the fair commonwealth, they should follow them unceasingly, and pursue them with such intrepidity that the shadow of the aroused cause of veterinary medicine will reflect against all who may in the future dare to so offend public decency. The method of attacking the monster of quackery by prohibitive legislation is the only safeguard against the crushing juggernaut known as the spoils system.

GRADUATED VETERINARIANS OF NEW YORK STATE.

Through the courtesy of Secretary Claude D. Morris, of the New York State Veterinary Medical Society, we have been furnished with an advance copy of a little pamphlet entitled "List of Veterinary Surgeons, compiled by the New York State Veterinary Medical Society, who are citizens of the State and registered in the various counties." In a preface it is explained that the list is sent out in the hope that its circulation will be the means of correcting whatever errors may be found to exist, if all those who receive it will inform the Secretary of any misstatements relative to the person's name, his address, and the name of the college from which he graduated, "as it is intended to print the list in book form in connection with such other information as will be of interest and value to the veterinarian." It will be observed that the list includes none but graduates, and we note by running over the list that there are 630 names, coming from 31 schools, as follows: American Veterinary College, 198; Ontario Veterinary College, 177; New York College of Veterinary Surgeons, 114; Royal College of Veterinary Surgeons, England, 35; Columbia Veterinary College, 29; Montreal Veterinary College (McGill University), 18; Chicago Veterinary College, 9; University of Pennsylvania, 5; Ohio Veterinary College, 4; University of Boston, 4; Royal School of Dresden, 3; Hanover Veterinary College, Germany, 3; National Veterinary College, Washington, D. C., 2; Royal School of Naples, 2; Royal Veterinary College, Stuttgart, 2; Central Veterinary School, Munich, 2; Imperial Veterinary School of France, 2; Veterinary College of Berlin, 2; Royal Danish Veterinary College, 1; University of Stockholm, 1; Switzerland Veterinary College, 1; Royal College of Copenhagen, 1; Bavarian Veterinary College 1; Cornell University, 1; College of Veterinary Surgeons of Prussia, 1; College of Geisberg, Wiesbaden, 1; University of Munich, 1; Veterinary College of Philadelphia, 1; University of Bern, Switzerland, 1.

GET READY FOR NASHVILLE.

Are you making preparations to visit Nashville in September, when the thirty-fourth annual meeting of the United States Veterinary Medical Association takes place? Those who were fortunate enough to be present at the convention in Buffalo need scarcely be urged to journey southward this year, because they are well aware that they cannot afford to be absent; but those who were prevented from attending last year have a double reason to make every effort to be among the fortunate ones this year. It is not only a trip fraught with the highest educational advantages, but it is a duty one owes to his health and happiness to throw off for a short period the cares of an exacting professional life and go forth into a most picturesque and interesting country, into a land new to most of us, and to a city whose beauty and progressiveness form a constant source of comment, and at a time when the great national exposition will be at the zenith of its magnificence. Southern hospitality is proverbial, and to the visiting veterinarian no spot in the land can possibly hold forth more attractions than Nashville, located as it is among the most celebrated stock farms and estates in the country. Begin your preparations now, and join your colleagues beneath the southern sun.

NO FEES FOR STATE STUDENTS AT THE NEW YORK STATE VETERINARY COLLEGE.—Just prior to the closing of the forms for this issue of the REVIEW the following letter, which is self-explanatory, was received, and we confess that, although we have given State legislation relative to matters veterinary a good deal of attention during the past session, we did not know that the bill which has by this notification become a law was pending before the legislature:

NEW YORK STATE VETERINARY COLLEGF,
CORNELL UNIVERSITY,
ITHACA, N. Y., May 22, 1897.

Dr. R. R. Bell:

MY DEAR SIR:—Governor Black has just signed our administration bill providing among other things that: "No tuition fee shall be required of students pursuing the regular veterinary course, who at the time of admission to the State Veterinary College are legal residents of this State." This will come into operation in the case of all New York State students entering next September.

Very truly yours,
JAMES LAW.

IT IS SAID that Marcus Daly has expended $1,800,000 in improvements upon his Bitter Root Ranch in Montana.

ORIGINAL ARTICLES.

[WRITTEN SPECIALLY FOR THE AMERICAN VETERINARY REVIEW.]

AZOTURIA, WITH STRAIN AND ATROPHY OF THE GREAT DORSAL MUSCLES IN A MARE.

BY W. L. WILLIAMS, V. S., PROF. SURGERY AND OBSTETRICS, NEW YORK STATE VETERINARY COLLEGE.

It is not unusual to meet with contusions, strains and fractures as a result of casting horses for operations, and at times we have had occasion to observe tympanitic colic after tedious, cramped confinement, but we have neither observed nor found recorded, among these accidents, the disease we know as azoturia or hæmoglobinuria.

The subject was a common-bred mare, aged eight years, used for light farm work and well kept by a very gentle owner. She was worked regularly during the summer, but quite irregularly during the winter.

For three years she had suffered from mild double navicular disease, which became more continuous and pronounced about September, 1896, on which account she was presented at the college clinic on Feb. 16, this year, for operation.

On the 15th, the patient was led about nine miles and on the 16th completed her journey to the college, a further distance of six miles, and was placed in the college hospital at 2 P. M. She was in robust health and high condition, without excessive fatness, and, having travelled the entire distance at a walk to the halter, she arrived wholly without fatigue. On the evening of the 16th, and morning of the 17th, she was fed sparingly on wheat bran and hay, after which she was led a short distance to a smith for shoeing, was allowed no food at noon, and was cast for neurotomy at 2 P. M. of the same day. She was cast with ordinary sidelines and surcingle, all four feet being securely fastened to the surcingle rings, well up on the sides of the chest, the fore feet being alternately released for operating.

Low neurotomy was performed on both fore feet by a student who had not previously attempted the operation, the work being as promptly and skillfully performed as could be expected. The patient struggled violently and persistently throughout and upon her release got up without assistance or unusual effort and walked to her stall, apparently weak and stiff from her confinement, but without suggestion of grave injury. At 10 P. M. she was down but apparently comfortable and was left for the night without suspicion of anything unusual.

On the morning of the 18th, it required the aid of two men to assist her to her feet. She was then with difficulty walked to an adjacent stall and placed in slings. Examination showed the two ileo-spinali muscles, as well as the gluteals, much swollen, hard and tense, the left side being most severely affected. The urine was abundant and of a dark chocolate color characteristic of azoturia.

As is usual in severe or moderate cases of azoturia, the slings could not be borne, and the patient was lowered to the floor and well bedded. Becoming uneasy again after some three hours, she was once more lifted to her feet and placed in slings, and was then found able to remain in them, bearing her chief weight on the feet. She was accordingly left in the slings until the morning of the 19th, when she had so far recovered from the attack that the slings were discontinued and the patient got up and down at will. She ate fairly well and drank a moderate quantity of water. The tumefaction of the muscles appeared to decrease for a time without medication, but soon began to increase.

On Feb. 22d the great dorsal muscles were enormously swollen, hard, tender, hot, standing up above the spinal column, the course of which was marked by a furrow, the affected muscles standing out clearly from neighboring structures, thus marking as clearly and with as great detail the exact area of the dorsalis muscles on each side from withers to the loins as could be done by a dissection, the tumefaction extending backward and including to some extent the gluteal muscles also, and to a lesser degree the posterior muscles of the thigh (semi-membranosis and semi-tendonosis), rendering the patient quite stiff in her movements and causing her temperature to rise to a maximum of 103.4° F.

On the 23d there was little change in condition except some œdematous swelling about the sternum and in the limbs, the œdematous condition involving the operative wounds, causing the bandage to be saturated with serosity, but not otherwise affecting them unfavorably.

Up to this date in conformity with my usual practice, no medication had been applied; but to relieve the complications present, diuretics were ordered internally and an anodyne liniment to the affected muscles.

On the 24th there was a general improvement, the muscles were less hard, the swelling decreasing and all seemed so favorable that the medication was relaxed, and on the following day, the improvement continuing, it was discontinued and out-door exercise permitted for a short time.

On the 26th, while the general condition of the patient was quite satisfactory, it was seen that the great dorsal muscles were commencing to waste rapidly, and having seen two previous cases of severe strain of these, due to casting with side-lines, both of which, without the coincidence of azoturia, resulted in extreme atrophy, it was at once concluded that in this patient, too, the atrophy would prove rapid and complete.

On the 27th the atrophy continued with great rapidity and on the following day it was seen that the left gluteals were involved also to a moderate degree.

On March 1st, the atrophy of the great dorsals was complete, giving the appearance of the subcutaneous excision of the entire muscles from withers to loins, leaving a deep, wide furrow on either side of the spinal column, the dorsal spines of which stood up sharply.

The general improvement was rapid, so that on March 3d, she was discharged convalescent, the operative wounds entirely healed without scar, the appetite and general health good and without apparent weakness from the extreme muscular atrophy, and travelled home, a distance of fifteen miles, without difficulty.

While this case points clearly to the possibility of azoturia as a casting accident, it suggests perhaps with equal force the possible coincident production of both a strain and azoturia of the same muscles, tending to confusion in diagnosis and treatment. We have no differential symptoms of a local character between the two, although the one is admittedly a local affection, the other a constitutional malady, the exact character of which is an unsolved problem. In fact, the only grounds for the opinion that the two coexisted in this case are that we had present the pathognomonic constitutional symptoms of azoturia, with the history of violent struggles of the animal under conditions which had previously in our experience produced severe strain of the great dorsal muscles without azoturia, the eventual results of which were parallel in all cases.

The tumefaction of the great dorsal muscles and their later severe atrophy belong quite as much to the one as to the other of the two affections.

It has been already noted that immediately prior to casting the patient for the operation she had been sparingly fed and had had very slight exercise, each of which tended to obviate azoturia, and would generally have sufficed, and left us in a somewhat difficult position to explain the occurrence of the disease. Later we discovered that for a period of 20 hours prior to casting she had been deprived of water, an element not generally reckoned with in the etiology of azoturia, although we have ventured to suggest a parallel line of thought in a prior article in the REVIEW.* Therein and elsewhere we have held that azoturia is due to certain definite conditions having for their antecedents well determined historical data following each other in an unvarying sequence.

a A sound animal with exalted nutritive powers not drawn upon by disease, pregnancy, rapid growth or senile wasting.

---

*"Pathology of Azoturia," etc., AM. VET. REV., Vol. XIV., p. 172.

b An abundant nitrogenous diet without overfeeding to the extent of impairing digestion, absorption or nutrition.

c A period of labor which instead of producing poverty or emaciation shall bring about a vigorous and robust state of the entire body, especially of the nutritive and muscular systems.

d A *brief* cessation from labor with more or less completely enforced rest extending over a period of one to ten or possibly rarely more days.

e An abrupt termination of the brief period of enforced idleness by labor or other severe exertion, during the first one, two or rarely more hours of which the susceptibility to the malady is manifest, after which the equilibrium of the system is restored and the possibility of producing azoturia ceases.

In studying the effects upon the physiological state of the animal induced by the environments in the sequence related we find in:

a A system prepared for intense nutritive activity, reaching beyond the general requirements of the body.

b A diet fitted to produce a high state of nutrition, especially a highly nitrogenous blood supply, abundant in quantity and quality.

c The period of labor intensifies, per necessity, the nutritive activity which is met by the abundant food supply, increasing the amount of the red blood cells and other nitrogenous constituents of the blood, muscles and other tissues without augmenting in a like degree the water of the blood and other nutritive fluids; a state in the highest sense physiological and capable of indefinite maintenance.

d The nutritive functions stimulated by the preceding conditions attain a high degree of perfection and acquire what we may term a momentum capable of continuation during a *short* but not *long* period of rest with the usual rations, resulting in the accumulation in the blood of an unnecessary amount of nutritive material, rendering that fluid still richer in solids and comparatively poorer in water, producing a state which we may term qualitative plethora, and which, though perhaps perfectly physiological, can only be temporarily maintained, but during which period a comparatively slight disturbance of the equilibrium may bring about results of a grave pathological character.

e Finally the period of sudden exertion causes through the arousing of sweat and other secretions a rapid withdrawal of water from the blood, while at the same time solid products of tissue waste are promptly thrown into its current, the two factors combined serving to render it so far sub-normal in its relative amount of water that the resultant density makes it impossible for the blood current to pass normally through the capillaries, leading rapidly to blood stasis, extravasation, necrosis of the blood, breaking down of the red blood cells, their resorption and eventually excretion by the kidneys—hæmoglobinuria.

It has been experimentally shown that a muscle at work requires about 75 per cent. more blood than the same organ at rest, and we constantly observe that locomotory muscular contractions offer the greatest physiological resistance to the blood current, increasing the number and force of the heart's beats. We should then expect to and do find that the blood stasis occurs in the capillaries of the great muscles of locomotion, with engorgement of arteries and capillaries, extravasation of blood into the muscular tissue, with tumefaction, pain and eventually paralysis of the part, followed in many instances by atrophy of the affected muscles.

If this line of reasoning be correct, we would anticipate the greatest changes in those muscles most violently exercised, hence in azoturia produced by locomotion we should expect the disease to exert its chief force upon the gluteals and the ilio-patellar group of muscles, while in a casting accident like that related the latter group would wholly escape, while the great dorsal muscles would prove the salient point of attack, the gluteals and posterior femuro-tibial group participating.

In the typical case of azoturia one of the most evident symptoms is the knuckling over of the posterior metatarso-phalangeal articulations, due chiefly if not wholly to the grave lesions in the ilio-patellar muscles, but in the case related, the affection of these parts being wanting, this symptom too was absent. This case affords special support to our view of the pathology of the disease, since although the patient had been somewhat restricted in diet and very gently exercised, which would under ordinary conditions have prevented the disease, yet these were more than counterbalanced by the extreme water starvation which should, if our contention be true, be even more effectual in the production of the disease than the slight and brief decrease in the amount of food and the very deficient exercise immediately prior to the casting in its prevention.

These circumstances lead us to believe that the causing of animals in a state bordering on azoturia to drink freely of water just prior to their first labor after a period of rest would tend to prevent in many cases the advent of the disease, and emphasizes the importance of relying in our treatment of azoturia, as we have long done, chiefly upon inducing the animal to consume as much water as is possible, and lends force to the belief which we have for some years held, but not tested, that the most efficient and rational treatment for the disease in its initial stages consists of the intra-venous injection of water or a ½ or 1 per cent. solution of sodium chloride.

WHY?

By W. L. Rhoads, D.V.S., Lansdowne, Pa.

A Paper read before the Pennsylvania State Veterinary Medical Association, March 3, 1897.

Why, my fraternal brothers, you ask, have I chosen such a subject. *Why* it allows me scope for a number of inquiries and assertions as the subject would of itself suggest.

Why are we veterinarians, as a class, prone to travel our own individual route or rut? I use the latter term advisedly, for too many of us are at present wearing a rut, or perhaps a myriad of ruts, which will be found very hard to leave when we are at last awakened by the onward movement of the Juggernaut car of Science, which we will find overtaking us in the natural course of events, unless we now take hold of the work before us and live according to the revised reading of the old axiom: "That all things come to him who waits"; this, in accordance with the times, has added to it, "and hustles while he waits."

Are not periods of depression in our work times when we are taught to note how narrow has become our sphere of work and how great the field of our possibilities when properly managed? Lowell has said, "to a healthy mind the world is a challenge of opportunities."

Why not make these times of waiting hours of improvement that we may more thoroughly grasp our whole duties; that we may be better able to cope with the difficulties and dangers that constantly beset us on every side.

We should remember that absence of occupation is not rest. "A mind quite vacant is a mind distressed." *Why* wait around aimlessly with your thumbs thrust in the armholes of your vest, or possibly stuck deep into otherwise empty pockets? If you think you are posing, let me make a suggestion, don't continue in that line. Veterinarians, as a rule, make poor artist's models; about one in a thousand succeeds, and you are not the man. You stand just as good a chance for a foreign mission, and you cannot get that until all the good after-dinner speakers have declined.

Why not use this time in attending and assisting your local veterinary medical associations? *Why* not at least answer the invitation tendered you to do so? *Why* is it that not three per cent. of the veterinarians so honored are enough interested to answer the same? Is it due at this time to a rush of business or on account of the exorbitant price of postal cards? *Why* do you consider your fellow-practitioner less worthy of an immediate reply than any other correspondent. Are you interested in the profession only so far as it has a monetary value to you directly? If your interest is of a broader gauge, and I trust it is, why not show it by granting your fellow-practitioner an early reply to all correspondence? *Why* not show your interest in a more potent form by attending the meeting of your local veterinary medical association? If you are not a member, go as a visitor. You will always find the latch-string out, or in later phraseology, "Just press the button, and they will do the rest." You will soon become so interested you will realize your need of association fellowship and wonder how you existed without it. Or probably you are one of those who are willing to enshroud themselves in a mantle of egotism, and feel the meetings of the association unworthy of their attendance and support. Yes, I meant to use the word shroud, as such an article will be useful in their early professional burial. Do you not realize the rapid advancement of our profession is due in a great measure to our associations? Then why are you contented to continue your parasitic existence? You cannot even be considered as a sponge, for it will upon pressure or by slow evaporation give out all it has taken up.

Why not give to your fellow-practitioners at these meetings, or through the medium of the veterinary journals, more of your cases and experiences, that all may be benefited and our worth to our people enhanced all over the land; some one may be encouraged and enthused by your effort to lighten the burden of the veterinarian, and in return may suggest the idea you have been groping after for years. *Why* not be willing at all times to give your professional brother a light off your cigar; he has gained, you have not lost, perhaps gained also by the aroma of his probably superior Havana, which had been useless to him till the procuring of your assistance? *Why* not be ever ready to reach out the right hand of good fellowship and assist each other? Not willing to do it only on demand, but proffering it at all times, thus showing to your professional brethren that you have an object in life; an object which in your case deservedly begins with a capital O.

What do we live for if it is not to make life less difficult to others? *Why* not, in furtherance of this same end, take a greater interest in public affairs and thus loan your valued influence to better government throughout the land? We, as a profession, take little appreciable interest in politics, and why? Is it because we are afraid of crossing our clientage? Can we not well afford to do without the practice of the narrow-minded cynic who ceases to employ us when we but prove ourselves capable of administering to his stock, prove we have a mind capable of independent thought by being men enough to assert the courage of our political convictions? *Why* is it that we find so few veterinarians on our local boards of health when they are so well prepared both by education and training to act as sanitary experts in perfecting the healthfulness of the meat, milk and food supply of a community as well as the sanitary surroundings?

Why is it that the veterinarians will vote and in many cases assiduously work to accomplish the desired ends for probably a valued client to us, financially, yet as a politician he may be a ringster and a spendthrift with the public moneys? Moneys which too many of the legislatures of to-day feel it a duty to spend in many cases wantonly and recklessly. Yet this money all comes through the channels of taxation from the individual who demands that the public receive it in a way which guarantees the greatest good to the greatest number. *Why* are our veterinarians assisting in this robbery of the populace by charging exorbitant fees for public work? Fees which in many cases trebly repay them for that day's loss of private practice. Are you not putting a stumbling block in the way of the furtherance of just such work? It is true a stumble may prevent a fall, but it is not well to stumble too often, it looks suspicious and may cause rumors; you will then have to ask yourself *Why?*

Why will our members deride and criticise legislation already gained (which, though probably not what we would like it to be, is yet a stepping stone to better), when they absolutely refuse to loan their assistance toward the procuring this much-to-be-desired article? *Why* is it the men most loud in their protests against it, the ones always ready to illustrate its faults, are the ones who positively would not lend their assistance in its preparation that it might have been free from the defects against which they cry out? *Why* will our members try to break down good laws that many of them have sorrowed over in the past because they did not exist? *Why* will members of the veterinary profession, who believe in the merit system of appointment see it endangered for their own selfish ends when they know that for their own gratification lasting but for a few short moments at best they endanger a system which all aim to perpetuate in their own professional career?

Why not pause a moment to think? You will then realize your efforts for self-aggrandizement at the expense of your fellow men are of the boomerang character and they are apt to turn upon the projector. Such work in the end will receive such recompense as it merits.

"Who by aspersions throw a stone at the head of others hit their own."

Why will the young men of to-day deride and criticise the older ones in practice with whom they come in competition? They fail to realize their position as practitioners has been made possible by these same men who have worked shoulder to shoulder early and late when there was little apparent honor in it; at the same time breaking tidal wave after tidal wave of ignorance, arrogance and depression, they knowing full well that good intentions clothe themselves with sudden power.

Why is it that so many will be fully aware of many things punishable yet apparently fail to see them until they begin to encroach upon forbidden personal territory; then the cry of anguish is raised, and you are surprised that you are not immediately lifted out of the quagmire into which you persisted in going? *Why* not come out boldly at the first offense, at the first trampling upon your rights assert your manhood and professional standing, for right is right, and wrongs no one? *Why* not go through life bearing the load which the contingency of the times has thrust upon us, and bearing it with honor; a credit to ourselves individually, and to the profession as a whole? The time is not far distant when we as a profession will become the guiding star of a whole nation. As sanitary humanitarians, are you in a condition or are you preparing yourself to share your portion of the burden? If not, why?

You are certainly not doing it by showing your preference for the literature contained in horse journals and agricultural magazines when our professional ones contain so much that is not only beneficial, in an educational way, but is interesting not alone by its association but on account of its true worth. *Why* is it in the face of this fact but one in every four North American veterinarians subscribe to and support their own professional literature? It is true our country has been bordering on a panic which, thanks to the keen foresight and business training of the American people, has been averted. Yet, is that just cause for your making an auction mart of your profession? If not, *why* do you offer bargain counter prices? Prices which you well know when once cut are so difficult to restore in times of prosperity. *Why* do veterinarians aim to establish prices for surgical work that are no just compensation for the skill required, and which cannot do otherwise than lessen the worth of the work in the eyes of laymen and the general populace? *Why* will you take contract work at prices that are not half compensating and thus lessen the volume of income to yourself individually and lower the estimate value of the work generally?

Why do veterinarians, many of whom have been educated at the supposedly better schools, feel that quackery is a paying branch of what would otherwise be a wholly honorable profession? *Why* do they feel that placards bearing pictures and self-laudations wholly unprofessional in appearance and their work when it only tends to lower them in the public estimation? *Why* do we not impress upon the dairy people of this State the urgent need of stringent police measures and the enforcement of the same, that they may know all cattle brought into the State to replenish their herds are free from all infectious and contagious diseases, when the losses already incurred by this source are assuming a serious aspect as regards the dairying interests and threaten to become a barrier to the continuance of the valuable control work now going on? Work, which at this time must not be stopped, and which can be best perpetuated by the veterinarians individually assisting it, for we live in deed not years; in thoughts not breaths, in feelings, not in figures on a dial.

WHAT PROFESSOR BANG'S WORK TEACHES.

By Leonard Pearson, B. Sc., V. M. D.

A Paper read before the meeting of the Keystone Veterinary Medical Association, March 9, 1897.

Professor Bang of the Imperial Veterinary School in Copenhagen, Denmark, is one of the greatest authorities on tuberculosis of cattle. His researches in this field have been published from time to time during the last fifteen years and to him belongs the credit of having first discovered and called attention to many of the facts in connection with this disease that were previously unknown, but have since been repeatedly observed and re-demonstrated.

Prof. Bang's country is one of the smallest of Europe, but its inhabitants are thrifty, frugal people of a high order of intelligence and much conservatism. They depend largely, if not principally, upon the dairy for their support, and although the country has a population of but 2,200,000 and an area of but little over 15,000 square miles, about one-third the area of Pennsylvania, there are in Denmark about 1,700,000 cattle (approximately the number in Pennsylvania).

To illustrate the importance of the dairy it may be stated that in 1890 Denmark exported more than $22,000,000 of butter and more than $2,000,000 worth of cattle. This amounts to more than $10 for each inhabitant of the country. It has been known for a long time that tuberculosis is a widespread disease among the cattle of Denmark and various measures have been recommended and applied with a view to its suppression.

From the above statistics it can readily be seen that the subject is one of great economic and national importance in Denmark because it involves the foundation of the principal source of the country's wealth and prosperity. In 1892 an appropriation was made by the government for the support of investigations to be carried out by Professor Bang for the purpose of determining the most practical means to be employed in restricting the ravages of this disease. The appropriations have from year to year been renewed and increased until at present they amount to about $30,000 per annum.

This government work has been conducted on such a large scale and in such a thoroughly careful way that the results are more instructive than those derived from similar experiments conducted elsewhere at any time. One of Professor Bang's recent publications was translated by the Hatch Experiment Station of the Massachusetts Agricultural College and published as Bulletin No. 41 in August, 1896, and this Bulletin has been referred to and quoted from so frequently that Prof. Bang's name is now well known among readers of agricultural papers and those who take an interest in the discussions on tuberculosis of cattle. It is always possible by quoting disconnected sentences and isolated paragraphs to give an inaccurate and sometimes a very misleading impression as to the author's opinions and statements, and this has occurred in reference to the writings of Professor Bang.

The undersigned has been familiar with the work of Professor Bang for a long time and has given his numerous publications careful study, which has been supplemented by conversation and correspondence with their author. The lessons that may be learned from Professor Bang's writings and experiments are so important to us in this country at the present time that it seems well to formulate some of them and to attempt to express them without ambiguity. Among the most important are the following:

Prevalence of Tuberculosis.—It has been known for a long time that tuberculosis prevailed extensively among Danish cattle, but the actual extent of the disease as revealed by the use of tuberculin was something of a surprise. In testing more than 53,000 cattle it was found that 38.5 per cent. of them were tuberculous to a greater or less degree. Moreover, it has been shown that the germs of tuberculosis are not omnipresent, because many herds are entirely free of all traces of this disease and in some of these healthy herds the cows were large producers of the class.

Degree of Contagiousness of Tuberculosis.—It has been clearly shown that the longer the disease exists in a herd the greater is its prevalence, leading to the belief, which is substantiated by other observations and experiments, that long continued contact is necessary for the extensive prevalence of tuberculosis in the herd and the longer such contact has existed the more extensive will be the spread of the malady. That some herds remain healthy notwithstanding the fact that they have been exhibited at cattle shows and in public places where they must inevitably have been exposed to the germs of tuberculosis for a short time, indicate that such exposure is not always dangerous. The infection in many herds has been traced to the introduction of a single diseased animal.

The Infectiousness of Milk.—The milk from tuberculous cattle has been known to produce tuberculosis in calves and swine in very many cases and also, strange to say, in such a comparatively immune animal as the horse. Attention is called to the dangers that accompany the use of skimmed milk from creameries, because if part of this milk is supplied by tuberculous cows and the mixed product is returned to the farm the disease may in that way be communicated to healthy herds, and common observation has proved that this is not rare. It is advised to heat all such skimmed milk to 185° F. before it is used. This destroys the tubercle bacilli.

Heredity.—Tuberculosis is rarely inherited and in all but the most exceptional instances the calves of tuberculous cows are sound when they are born and if removed from contact with tuberculous animals and fed on milk from sound cows or milk that has been heated to 185° F., they will remain free from tuberculosis.

Tuberculin as a Diagnostic Agent.—The prevailing opinion as to the accuracy of tuberculin as a diagnostic agent is amply sustained and it is established that the use of tuberculin furnishes by far the most accurate means of detecting tuberculosis and permitting the inspector to separate the healthy and diseased cattle. It is made clear that the degree of reaction does not indicate the extent to which an animal is diseased and that a high reaction may sometimes occur in an animal that is but slightly affected, and it is stated that from the degree of reaction conclusions as to the development of the disease must be drawn with great care. The reported failures to discover the lesions of tuberculosis in making post-mortem examinations upon animals that have been condemned by the use of tuberculin, are incorrect in great part, since practically all of the tuberculous animals killed in European countries are killed in slaughter-houses and their flesh is intended for the market after inspection and under certain restrictions and exceptions, so it is quite evident that all parts cannot be fully investigated and doubt always accompanies a negative result.

Professor Bang's personal experience, which is larger than that of any other veterinarian, has shown but three cases of typical reaction in which it was not possible for him to discover tuberculous deposits and in one of these there was disease of a chronic and incurable character. It is stated, and this is well known to everyone who has used tuberculin practically, that some severe cases do not respond to the test and must be detected by a physical examination, and Professor Bang says that it is probably always possible to discover these cases by the usual clinical investigation, excepting where the disease has become stationary and is of slight development. These exceptions are minor and unimportant. Tuberculin is not to be relied upon implicitly as a diagnostic agent, but furnishes a method of diagnosis so incomparably superior to the methods previously employed that it is scarcely to be compared with them.

Dangers attending the Use of Tuberculin.—After an experience extending over 53,000 cases Professor Bang is of the opinion that tuberculin is not injurious to healthy animals and that it cannot injure tuberculous animals, excepting by causing the disease to advance more rapidly and that "such an acute development of tuberculosis as a result of tuberculin injection is to be feared only exceptionally and then in case of advanced tuberculosis."

His final conclusion is "that we have now found that in tuberculin we possess if not an absolutely infallible, still an excellent means for recognizing tuberculosis, and that its application is not connected with any particular danger," and it is also stated that "tuberculin has been employed upon a large scale for years and still the demand from farmers constantly increases."

The Use of Infected Cattle.—In Denmark it is evident that if all tuberculous cattle were at once destroyed without compensation to their owners the result would be widespread financial distress and ruin and it is out of the question for the Government to attempt to pay for all of the tuberculous cattle, because the amount that would be required for this purpose is beyond its resources. Therefore another method has, perforce, been adopted, which consists in the retention of the animals that have reacted to the tuberculin test and their continued use for breeding, for milk production and for the shambles. It has been found that under certain precautions all of these can be done safely and the saving is so great that a more radical method would under the circumstances be unjustifiable; but it must be observed that the tuberculous cattle are kept alive only in perfect isolation from healthy cattle. They are cared for separately and when possible by separate attendants. They are kept in separate buildings or in distinct and completely separate sections of a common barn. Their calves are removed the day after they are born and are brought up on milk that has been heated to a point that will insure the destruction of the tubercle bacillus. Their milk is used for the manufacture of butter (principally for export to England), but only after it has been heated to 185° F. In this way healthy herds are being developed from tuberculous ones and as the tuberculous cattle die or are killed for beef the reacting division of the herd becomes smaller and smaller until finally it has disappeared, and thus tuberculosis is being allowed to die a natural death.

The Curability of Tuberculosis.—Occasionally tuberculosis becomes latent after an animal has reacted to tuberculin, the subject improves in condition and fails to react upon subsequent injection, so that it may not be possible to confirm or rëestablish the original diagnosis. This takes place most frequently in the cases that are less advanced, and some have thonght that such cases might be cured. In order to throw light on this question Professor Bang killed and made post-mortem examinations upon four animals of this sort, but found that they all had tuberculosis, and states that " I therefore do not venture to draw from these observations the conclusion that these animals that failed to react one year after a typical reaction are to be regarded as cured. In many cases this conclusion would perhaps be justifiable, but as it cannot always be the case I consider it advisable to look upon animals that have once shown the typical reaction as suspicious and to leave them in the reacting division."

Heredity.—The matter of inherited predisposition to tuberculosis is considered and some doubt is thrown upon its influence and even its existence, and there is no reason to assume " that a calf whose sire or dam suffers from tuberculosis accidentally acquired has thereby inherited a predisposition for tuberculosis which offers a more favorable nutritive soil for the development of the germs of tuberculosis and the predisposition, however great it may be, can play no practical part if infection is avoided."

The Use of the Flesh of Tuberculous Animals.—Under proper inspection and certain restrictions and exceptions it seems to be quite possible to use the flesh of some tuberculous animals without danger, and such is the practice not only in Denmark but in all other European countries. Some carcasses are condemned outright and destroyed. Others are sterilized and sold as cooked meat, while still others are allowed to go upon the general market without restriction or with the information that it is derived from tuberculous animals, so that those who purchase it may use it with special care. These measures are generally regarded as sufficiently rigorous.

It is Possible to Eradicate Tuberculosis.—Most important of all, Professor Bang has shown that by the use of tuberculin and measures based upon its use it is quite possible to eradicate tuberculosis in herds. This he has demonstrated on such a large scale in so many instances that there can be no doubt about it. Moreover he has shown that by the employment of the Danish system the suppression of tuberculosis can be accomplished at comparatively small expense and that the measures inaugurated in Denmark are constantly growing in popularity among live stock owners.

His conclusion as published in Bulletin No. 41, above referred to, is as follows: "The struggle against bovine tuberculosis must of course be of several years' duration, but it can and must be crowned with victory. In this struggle tuberculin has yielded us invaluable service. Only with the aid of this agent can we determine the actual extent of the disease. On the basis of the tuberculin investigations we are already in position to establish a rational plan of operation and by this means alone can we retain the advantages gradually won; but the contest is well worth the pains. The conquest of bovine tuberculosis promises not only large economic profit, but also the annihilation of an important source of human tuberculosis."

An Innovation in Horse Show contests occurs at the coming Philadelphia exhibition. Five coaching men have entered for the road contest, which consists in a drive from Broad and Walnut streets to the grounds at Wissahickon, a distance of fourteen miles. Must have not less than 3500 lbs. and cover the distance in not more than 75 minutes. The turnouts will then be judged on the condition of the horses and the appointments of the coach or drag.

VETERINARY SCIENCE AND ITS RELATION TO THE PUBLIC HEALTH.

By J. F. Kennedy, A. M., M. D., Sec. Iowa State Board of Health, Des Moines, Iowa.

A Paper read before the Iowa State Veterinary Medical Association.

Mr. President and Gentlemen of the Iowa State Veterinary Medical Association :

Your secretary in asking me to present at this meeting a brief paper for your consideration, was kind enough to suggest the topic which I have selected—"Veterinary Science and its Relation to the Public Health."

My subject therefore naturally resolves itself into two general divisions.

1. Veterinary science.
2. Its relation to the public health.

It is but a comparatively few years since veterinary medicine has been lifted from a basal position among the professions—from the domain of rank empiricism to the honored and dignified position of a science—a noble, beneficent and liberal, if not literally humanitarian science.

The whole world of science owes a debt of gratitude to Chauveau, Wesley Mills, Fleming, Liautard and a score of others because of their earnest, well directed and efficient work in the field of comparative anatomy and physiology.

Forty years ago, when I studied medicine and attended medical lectures at the Jefferson Medical College in Philadelphia and at the University of New York City, there was no instruction whatever in our text books, or in the lectures delivered by the ablest teachers of the country upon these branches. The educated physician of that day knew little more about comparative anatomy and physiology than the uneducated "horse doctor" of to-day, or at least was not required to know more.

The whole science of medicine and surgery, whether applied to man or beast, is almost being revolutionized—and largely by experiments upon the lower animals. Every advance in preventive and restorative medicine is a benefit to both man and beast.

Prof. Wesley Mills, the able lecturer on physiology in the faculty of human medicine and in the faculty of comparative medicine of McGill University, Montreal, Canada, in an address to the graduates of the veterinary department of the university in May last, said beautifully and truthfully :

" Medicine is, as applied to man, no longer a system of blind empiricism, nor, as applied to the lower animals, a combination of that with farriery. The barber surgeon and the farrier are but landmarks in the history of the evolution of medicine. Gentlemen, there is but one animal kingdom, governed by the same natural laws, applicable alike to man and his fellow creatures, lower in some respects, in the scale, but sharing with him the liability to disease and death.

" Comparative medicine is the medicine of the future and the sooner that is realized the better for man as well as beast. Indeed, we now grasp the future—the present touches its skirts. Specialism, or division of labor, will be necessary, because the powers of individuals are limited. Some will elect to treat the lower animals, and some mankind, with even further subdivision; but there is only one science and art of medicine ; and all the various bodies of workers in this vast field should form but different battalions of one great army fighting for the prolongation of vigorous life and the mitigation of pain in every quarter to which the power of medicine can reach."

Medical men and teachers in our medical colleges are everywhere coming to realize these facts. The veterinarian of to-day, who has been properly educated, goes out from his college qualified not only to practice his profession, but to enter the best medical colleges in the land with advanced standing.

How changed the relation of the educated veterinary surgeon of to-day ! The time was when, within my own memory, he was assigned a secondary or inferior place when compared with the human physician or with those of the other learned professions, but now the well equipped D. V. M., everything else being equal, takes his place in the scientific, social, moral and commercial world along with the ablest jurists, physicians, clergymen and educators!

It seems to me from a diagnostic standpoint the veterinary practitioner should be even better equipped than the physician. The latter is greatly aided in his efforts to arrive at a proper diagnosis of the disease of his subject because of his ability to speak and to understand language. The subject of the veteriary surgeon, on the other hand, is mute. The character of the disease, its location and progress can only be learned by a sign-and-symptomatic language only acquired by patient study, thorough acquaintance with the anatomy, physiology and pathology of the animal, and by clinical observation; and these same qualifications must be adapted to the horse, cow, sheep, poultry etc., as individuals differing greatly. Hence, though he may not be able to speak the language of the domestic animals, he must be able to readily understand their speech as voiced by their physical condition. Another reason why the veterinary surgeon should be thoroughly competent is that his subjects have no choice. They are entirely subject to the choice of their owners, who may from ignorance, prejudice, or mistaken economy select some one, if there are any such, who don't know the difference, anatomically, between a horse and a chicken, much less between a cow and a hog, and whose treatment is about as scientific. For this reason and because of the vast sums of money represented by the domestic animals of Iowa, the highest possible qualification should be required of those who enter upon this practice.

It seems to me a burning shame that in this intelligent State of Iowa, and in this enlightened day, any man without any knowledge whatever of veterinary science, without knowing even the A, B, C of the anatomy of domestic animals, can swing to the breeze his sign as "veterinary surgeon"; and there is no law to inquire into his qualifications, and no power to regulate his practice.

The man or woman who teaches the farmer's children; the man who insures his property against fire and tornado, or his person against death or accident; the railroad corporation that hauls his produce to market; the bank in which he deposits his money; the dentist who pulls his teeth; the physician who treats himself and family, and druggist who compounds his medicine are all subject to statutory provisions, but when sickness and plague attack his flocks and herds and threaten their destruction, and endanger even the lives of his family, the law reaches out no guiding hand. The unprincipled and ignorant charlatan has an unchallenged standing before the law and often by his brazen effrontery and "stud-horse" advertisement enjoys a more generous patronage than his educated, competent and honorable rival.

It seems to me, therefore, that one thing the people of Iowa need is protection—legal protection against this dishonorable and dangerous class of pretenders, and you will pardon me gentlemen, if I suggest that it has seemed to me that you have been somewhat disposed to waste a good deal of ammunition in criticising some of your own advanced methods of experimentation, diagnosis and treatment rather than in closing up your ranks and making the united effort you should to secure the standing before the law you are so justly entitled to.

But enough on this point. Your "Relation to the Public Health" is a most important one, and is so far recognized by the State as to provide for the appointment of a State veterinary surgeon, and to make him a member ex-officio of the State Board of Health.

The State Board of Health and the Dairy Commission have large claims upon you. I hope the time will soon come when the latter, if it does not have it now, will have ample authority and financial aid to enable him not only to determine the butter fat in a given quantity of milk, for commercial purposes, but the sanitary quality of the milk, butter and cheese. I would go much further. I would not limit his function to the dairy, but I would make him a dairy and food commissioner, with adequate legal and financial backing to do thorough work. However, to do his present duty—to insure a wholesome quality of milk, butter and cheese, he must depend very largely, if not almost wholly upon you. There must be inspection of the herds from time to time, as to their freedom from tuberculosis and other infectious and communicable diseases. Their food and drink, the condition of their stables, the methods of milking and of taking care of and marketing milk. In fact, all the sanitary or unsanitary environments must be known. The intelligent veterinarian is the only person from whom he would expect to get this information.

The State Board of Health and its auxiliaries, the local boards, are under the law charged with supervising and protecting the lives and health of the people ; and as there are so many of the infectious diseases of animals that are communicable to man, you will readily see the great interest these boards have in your profession and work.

It is not necessary to take the time even to name the various diseases of domestic animals that are common, or at least communicable to man. You are perfectly cognizant of them. Because their presence in the animal is a constant menace to the public health the State Board of Health depends upon your profession largely for protection.

It is the proper function and duty of your profession to insure to the people of the State as early a recognition of, and as effectual protection against, the invasion and spread of these diseases as possible.

A great deal of distraction, demoralization and damage have arisen from the attempts to prove how extensively an animal may be diseased to render it unfit for human or animal food—especially in regard to such diseases as tuberculosis and actinomycosis and their ability to render meat and milk from animals so diseased dangerous.

I think there has been, in settling these questions, too much deference paid to those short-sighted breeders and stockmen who care but little what the ultimate results are so long as they can line their pockets.

Let me read to you what an able, honored and fearless member of your profession said in an address, as retiring president last June—I mean Dr. Harbaugh, of the Virginia State Veterinary Medical Association.

"We have," he says, "to fight a monster which stretches forth its arms in all directions and clutches with its grasp all who can be controlled by fear, favor or value received; and this monster is the wealthy breeding interest which makes a hobby of high-priced pedigreed cattle until it tires of them and then unloads them on the unsuspecting dairyman to infect his smaller herd with tuberculosis. Even from our standpoint there are two sides to this tuberculosis question. The first is the public health; and I care not whether a man believes there is much or little danger in using the milk or flesh of tubercular animals through risk of transmission of the disease to the human being, it is certain that such milk and flesh ought not to be used. Milk is a part of the cow, and therefore animal matter, and if the cow is tuberculous her milk is part of a diseased cow, and should not be used for human food. The same proposition applies to meats from tuberculous animals, no matter how thoroughly sterilized, and it disgusts me to hear our would-be veterinary politicians talk of using such meats the same as they do for the lower classes of Europe, when we have meat to spare for the world. No, gentlemen, we are not in Europe and do not have to devour diseased products to prevent starvation. Let us be consistent and fight against all diseased animal products being used for human food.

"Another thing that surprises me is that there are veterinarians occupying high places who have the effrontery to tell us milk from tuberculous herds, when fed to pigs, produces the same disease in them and that there is little danger of producing it in human beings!

"These are breeders' opinions, whether uttered by veterinarians, agricultural journals or other hirelings. No man who sees the post-mortem lesions of a few tuberculous cows wants milk from any such animals in his house, danger or no danger."

I like Dr. Harbaugh for his sensible views, so fearlessly and and forcefully expressed.

The farmers of this State, especially the hog raisers, are appealing to you to protect their swine against the ravages of that fearful disease, hog cholera, that often in a few days sweeps as with the "besom of destruction" not only their hope of added wealth, but often the only means of retaining their homes.

There is one line of investigation and experimentation in connection with this particular disease that I wish to specially emphasize—I mean the great similarity, if not identity, of hog cholera and typhoid fever as it is manifested in the human subject.

Our honored State Veterinary Surgeon, Dr. Gibson, at a late meeting of the State Board of Health, read a most interesting report prepared by Dr W. T. Wright, of Vail, Crawford county, detailing an outbreak of typhoid fever in a farmer's family near Vail. The father and four daughters, who lived at home, and another daughter who was visiting in the family, all took down with typhoid fever—only two of the family, the mother and a young son, escaping. The father died—all the others, after a lingering illness, recovered. The well that supplied the family, as well as the stock, with water was situated in the lowest portion of the hog lot. The father and five daughters who were attacked with the disease, used freely of this water. The mother and son who did not use it at all, escaped. Previous to this outbreak of typhoid fever the hogs kept in this lot had had hog cholera in a severe and fatal form. Dr. Wright was led to examine carefully the symptoms present in the hog cholera cases and was struck with the marked similarity between the symptoms of these typhoid fever patients and the cases of hog cholera, and was driven to the conclusion that there was much kinship, if not identity, between the two diseases.

It seems to me that it would be well for the bacteriologists of the State, physicians and veterinarians to thoroughly test this matter. The presence of typhoid bacillus or one akin to it should, if present, be readily detected in the excreta of the hog during such an attack. Should such identity be established it would not be hard to adopt more rational methods of prevention and cure. But I cannot particularize any further. If the compliment of an invitation to prepare this paper has emboldened me to proffer advice, to call attention to matters outside my limited sphere, or to presume to tell you "what manner of men" you ought to be, you may simply regard it as a blooming illustration of the saying: "Fools rush in where angels fear to tread."

THE FUTURE OF THE VETERINARY PROFESSION.

BY E. L. VOLGENAU, D. V. S., NEW YORK.

One of the New York papers in a recent edition gives some startling figures as to the effect of the bicycle upon business in general and particularly its effect upon the horse and livery business. This journal puts the loss in horses and livery for the past year at $20,000,000. The loss to pleasure vehicles is estimated at $15,000,000, and in harnesses and saddles at $10,000,000.

To the veterinarian these figures are significant. For the past three years the earnings of veterinarians have been steadily on the decline. Some have ascribed this to "hard times," others to the increase in trolley and cable cars, others again to the competition of younger practitioners. Each of these is undoubtedly a factor, but the main cause for the diminished earnings throughout the whole country has been the almost universal adoption of the bicycle. The main question is, has the bicycle come to stay? If the answer is in the affirmative, veterinarians will soon have to seek new fields, and other methods of earning a livelihood.

The number of horses, good, bad and indifferent that have been thrown upon the market since the arrival of the seductive wheel, has served to so lessen their valuation, that, leaving sentiment aside, it hardly pays an owner to have a horse treated for any grave illness, and the lesser derangements, which can be remedied in one or two visits, and without the loss of much time or labor, are not frequent nor profitable enough to support many of us. From the four corners of the earth come the reports of veterinarians who are taking up other professions or trades more profitable than the honorable profession to which they have linked their destinies. Salaried positions under the state, municipal and federal governments are in greater demand than ever before, and there is an uneasiness throughout the profession which is ominous.

As long as the cattle, sheep and hog interests of the country are of such magnitude, there will always be a demand for veterinarians, but the problem in the large cities is a great one.

The young man desirous of entering the profession, had better consider well before entering a veterinary college and spending time and money in acquiring an education which will hardly net him interest on the investment. The old established practitioner who has "made hay while the sun shone," can view the situation with more equanimity than the younger men, who, in the natural course of events have their lives before them.

What are the prospects for the future? They tell us that western stock-raisers have stopped breeding horses; that sooner or later the supply having become diminished, the price will rise, and in direct proportion as horses become more valuable, so will our services be in more frequent demand, and we will be just as happy and prosperous as we formerly were. Let us see:—Upon an approximation by men who know it will take about ten years to exhaust the stock of horses now on hand, providing the demand continues as at present and no further breeding is indulged in. But here enters the horseless carriage. Ten years will take us well into the twentieth century. You laugh and say horseless carriages are impracticable, it is visionary, ridiculous to say that this motive power will be applied to delivery wagons, trucks, and the thousand and one purposes for which the horse is now used as the propelling power. Why is it visionary? Have we not had examples of changes in motive power without number? The steamboat, the railroad, the trolley, cable and electric car, and last, but not least, the bicycle.

Who would have dreamed fifteen years ago, when the first cumbersome bicycles were built, that to-day millions of wheels would be in use all over the world, and that to ride a wheel would be considered part of a liberal education. The bicycle is no fad that will die out as the result of the violence with which it took hold of the popular fancy; but a useful invention of great practical utility, which, as roads are improved, will become the almost universal mode of conveyance.

The motor-cycle and horseless carriage, which at the present time seem bulky and impracticable, will within a short time become so improved that the horse will be supplanted.

Now comes the ultimatum. Granting that the demand for the services of our equine friends is on the decrease, where is the veterinarian to find a market for his professional skill? The municipal, state and federal offices can employ but a limited number of veterinary surgeons. The balance must of necessity be content to earn a scant livelihood by means of the deteriorated general practice, or leave the profession to engage in more remunerative employment.

The higher educational requirements for matriculation into veterinary colleges, the longer curriculum, State licensing boards and protective veterinary legislation, have done much for the profession and will serve to keep out the undesirable element. As the number of students grows less, some of the colleges being private enterprises without funded capital behind them, and depending solely upon lecture fees for their support, will of necessity be driven to the wall. The result cannot help being beneficial to the profession at large. Better have five good colleges in the United States than fifteen struggling along day after day handicapped at every turn by the lack of funds.

There always will be a demand for educated veterinarians, and as their field of usefulness broadens it will devolve upon the colleges to give more attention to the essentially scientific studies embraced in the curriculum, viz.: Pathology, bacteriology, microscopy, chemistry, hygiene, botany, sanitary medicine and meat and milk inspection. Within these fields lies the work of the future veterinarian, and he will gain his success in life, both social and financial, not so much upon his ability as a skillful surgeon, or by his success in treating colic, fistulous withers or spavin, but upon his scientific knowledge and attainments.

Our fault has been that we have paid too much attention to the practical side of every-day practice, and often at the expense of the theoretical and experimental. We have judged other practitioners and been judged ourselves upon our money-getting powers, the ability to convert our professional skill into dollars and cents, and have sometimes been so awed by the end that we have not been particular about the means.

The bicycle and horseless vehicle mark the beginning of a new era for the veterinarian. From this time onward the marketable commodity will not be what we can do, but what we know.

REPORTS OF CASES.

THE VAGARIES OF INFLUENZA IN GREEN HORSES.

By Francis Abele, Jr., Quincy, Mass.

I have usually, when I had a disease of the respiratory tract, and temperature above 105°, in a green horse, prognosed to myself influenza coming on. I will not say diagnosed, for it is too early to make a diagnosis. Last year I had a case where the temperature was 107° for three days, when the temperature steadily declined. There appeared typhoid complications, to be sure, but I hardly hesitated at the outset from the temperature alone to diagnose influenza. The horse has been at work a year now. No abscess came and no characteristics of strangles appeared.

This winter I had a horse just from the cars, with a temperature of 108°. To be certain I took it several times. His appetite was gone, respiration difficult, snuffling and showing considerable pneumonic trouble. For two weeks the temperature was very variable. After about four days I had it down to 103°. Next day it was $106\frac{2}{5}$, yet the horse appeared better. The fever was intermittent ; one day up, next day down ; never failing in this respect. The whole right ramus of the inferior maxilla began to swell till it appeared like a case of osteo-porosis. To make it short, I opened two big abscesses before long and the horse is at work.

From the books at my command, I see no record of such a temperature for strangles. Is it common? I seldom see it varying far from 105°.

MODERATE EXERCISE SUCCESSFUL IN A CASE OF ILIAC THROMBOSIS.

By Frances Abele, Jr., Quincy, Mass.

Was called to a horse for azoturia, which recovered; was led home five miles, after thirty-six hours rest. After exercising a short time he would become lame, so that the leg would not be propelled at all, and every time he was driven it would be the same. After rest it would be all right again. Suspected thrombus. Examination proved suspicion. Rectal examination after exercise showed lack of pulsation in the external iliac and metatarsal artery. Prognosed treatment useless. Now for the live-and-learn experience part. The horse was driven every day until unable to proceed, and when able moved again. At last accounts he could go five miles at a jog before being overtaken so badly as to have to halt. Since this treatment started, I noticed in the Review a "foreign correspondence article" (I cannot lay my hand on it now) where this same line of treatment is recommended as the most satisfactory. Just how practical it is would seem to depend much on what work the horse was to be put to.

One veterinarian remarked to me, "What a good horse that would be to have a veterinarian examine for soundness. With nine out of ten, he would pass."

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By W. V. Bieser, D. V. S., New York City.

A New Fœtal Organ.—H. reports concerning an organ which is always present in the mouth of the foal during the last months of fœtal life. It is a long flattened mass of spongy consistency, measuring in its dimensions 19. 6 and 2 c.m. respectively and consists of two separate layers of dark brown color; on its surface the organ is strongly translucent; it has a cavity in its interior. H. thinks that it filters the liquor amnii by which the fœtus is nourished. If it is absent at birth, it is due to the fact of the fœtus having chewed and swallowed it. M. also found an analogous product in the mouth or pharyngeal cavity, which he does not consider to be an organ, however. It consisted of mucoid albuminous layers overlying one another, formed from the buccal and pharyngeal secretions. It served as a curtain to cut off all communication between the pharynx and amniotic cavity.—(*Berl. Thierärzt Woch.*)

DISCOVERY OF THE BACILLUS OF FOOT-AND-MOUTH DISEASE.—Foot-and-mouth disease being of a severe type in America and causing the death of many animals infected with it, needs therefore, to be put under strict veterinary prophylaxis. In Roumania the disease is of a much milder type; but still the mortality is enough to induce veterinarians and bacteriologists to hunt for the cause of the disease. The most probable habitat likely to be selected by the germ seemed to be in the diseased patches present in the mouth. Since February 1896, S. has carried on experiments to find the germ but failed to find it in the mouth lesions, as other observers before him failed in this regard. This failure to find the germ here can easily be explained by the fact that the mouth contains many different bacteria which develop in culture mediums much more rapidly than the newly discovered germ; the development of the latter may be hindered or destroyed. Furthermore many biological peculiarities of this germ may play a part here in its failure to always develop in the mouth, as it is very often absent in the mouth lesions. But after countless investigations S. succeeded in finding the germ after making many animal experiments that were crowned with success. He as well as the professor of the veterinary high school in R. observed these experiments. The bacillus of Sarcovicci shows the disease in calves in typical form, so that there is no longer any doubt as to the specificity of the germ. S. has concluded his experiments as to the morphological entity of the germ and all that now remains for him is to substantiate his results from a pathologico-anatomical standpoint. The author has been accorded the privilege of reporting the characteristics of S.'s bacillus. The bacillus has the appearance of nearly the dimensions of the typhoid bacillus of human beings (Eberth's bacilli), yet has power of motion, and by means of a special stain one discovers that bacillus has very large wavy swellings on its surface. It thrives on all ordinary culture mediums. With gelatin the cultures assume a brown appearance. It stains with all ordinary laboratory reagents. Fresh cultures do not color after Gram's method. Guinea pigs die after subcutaneous injections in from one to four days. The virulence of the bacillus remains for six months in satisfactory culture mediums. In all bovine species the disease can be produced with the bacillus. Size of bacillus in fresh culture and blood of animals sick with the disease is 0.07 u, but after introduction into bodies of animals experimented upon shrinks in size to 0.03 u. At 45° C. they remain pyogenic and at 48° C. perish after 15 minutes. The bacillus is not always present in the saliva or mouth lesions. S. has tried to attenuate the bacillus for immunizing purposes.—(*Berl. Thierärzt Woch.*)

ANOTHER GERM SUPPOSED TO BE THE SPECIFIC CAUSE OF FOOT-AND-MOUTH DISEASE.—J. in opposition to S. claims that he has found the specific cause of foot-and-mouth disease. Whereas S. failed to find the germs in the contents of the apthous patches of the mouth where one would most expect to find it, owing to there being so many different germs that hindered him in finding it. J. sterilized the apthous patches and with a sterilized syringe withdrew their contents and found as he claims the germ therein. While S. claims that the germ is a bacillus, J. claims it to be a protozoa of class of coccidia with double contour and refracting capsule. Upon inoculating bovine species with apthous contents freed from coccidia no symptoms of the disease occurred even after the lapse of twelve to fourteen days, but on inoculating the animals with the unfiltered contents containing the coccidia, the disease invariably ensued in from three to four days in all the animals inoculated. If this be so there are two distinct germs, that inoculated in bovine species can produce lesions of foot-and-mouth disease, one vegetable, a bacillus (*Sarcovicci*), the other animal, a protozoa, of class coccidia. Hence there can be no specificity in the germ of this disease and Koch's theory of specificity of germs must go begging, for he maintains the specificity of germs, both as regard to their form and morphological characters in the production of disease.—(*Berl. Thierärzt Woch.*)

FRENCH REVIEW.

ABSCESS OF THE PELVIS AND POLYNEURITIS IN A MARE.—As remarked by the author of this article, Prof. Labat, of the Toulouse school, the question of polyneuritis is but little known in human and also in veterinary medicine, and on this account the case is of a double interest. It relates to a mare which, having been affected with distemper, had presented several sequelæ, among which occurred first a large abscess of the left gluteal region, then afterwards one of the pelvic cavity with formation of a fistulous tract opening on the left side of the vulva, between this natural opening and the corresponding ischial tuberosity. Explored to recognize its condition, enlarged to permit the escape of the pus and the antiseptic segment, the mare would have made a comparatively quick recovery had it not been for a paresia of the fetlock of the hind leg, which soon became a true paralysis of the whole leg—conditions which were attributed by the author to neuritis of the small femero-popliteal nerve or at least of the anterior tibial, complicated with neuritis of the branch of the posterior crural muscles; evidently these lesions were characterized by special manifestations of locomotion, first by weakness at the fetlock, difficulty in carrying weight, sudden dropping of the joint, atrophy of the muscles, etc. No special form of treatment was followed, but the mare was left loose in a box with a large paddock connected with it, in which she was able to go and exercise herself. The improvement was very slow. There was no change the first two months, the third and fourth months she began to move better, to support the weight of her body, her muscles were slow to resume their normal size, but after six months of this natural repair, the mare was comparatively recovered and able to resume her work. To resume, says the author, the mare has presented, as sequelæ of distemper, two important accidents: *abscesses of the pelvis* and *localized paralysis* by *multiple-neuritis* (polyneuritis) affecting distinct muscular groups. The first have been often observed. The second must be more rare and have not yet been related. The abscesses followed their course in the ordinary time. The patient recovered more slowly from the motor disturbances; motoricity returned gradually in the affected muscles; the atrophy of the muscles was long in disappearing.—(*Rev. Veterin.*)

METRORRHAGIA IN A HEIFER [*By M. Leblanc*].—Uterine hæmorrhages may be classified into three categories. In the first are found those that occur during gestation or after parturition. In the second, those that are sometimes observed during the rutting season. In the third those that are seen outside of gestation and not when the animal is in heat. The case recorded by the author belongs to this third class. The animal had been ailing for twenty-four hours, her urine was colored red at the time of micturation; there was a stream of blood oozing from the vulva. She was dull, weak and her mucous membranes pale; the respiration and the temperature normal. The animal stretched and made efforts to expel the clots of blood contained in the vagina, some of which were extracted by the hand. The hæmorrhage was uterine, though it was difficult to locate precisely the seat of the hæmorrhage. Treatment consisted of wet cloths over the loins and vaginal injections of boiled water, 5 liters, and 10 grammes of perchloride of iron. Three days after, examination was made with the speculum and the vagina thoroughly cleaned of the clots of blood that it contained. The neck of the uterus was normal and presented a small clot of blood oozing through the os; evidently the diagnosis was correct. The animal recovered. The principal object of the report is to show the importance of the use of the speculum in the diagnosis of uterine diseases of our large domestic animals.—(*Journal de Med. Vet. and Zootech.*)

LUPINOSIS OF THE HORSE RESEMBLING GLANDERS.—USEFULNESS OF MALLEINE.—The value of malleine in assisting the positive diagnosis in suspicious cases of glanderous nature is well illustrated by the case reported by M. Dupont. A mare suspected of glanders had been reported in a large establishment and serious losses were threatening the owner, who required from the author a minute inspection of all his stock. The mare had an abundant grey reddish discharge adherent to the wings of the nostrils, the glands of the maxillary space were large and painful; on the pituitary membrane there were ulcers of various dimensions, involving the whole thickness of the membrane, with a purplish color at their bottom and their edges formed by a series of small granulations. The same manifestations existed in two other horses. The most minute inquiry into the history of the whole stock failed to reveal any serious condition to explain or even suspect the origin of glanders. The entire stock was malleined (23 horses); of these ten horses accused by a rising of temperature to 1.5° to 2°, and the condition would have looked serious was it not for the fact that there was complete absence of local reaction on all the animals. The suspected mare did not react and her temperature remained normal. Mr. Dupont was very much embarrassed. The three subjects which presented the suspicious symptoms were isolated—all the others were returned to work. A few days later a variety of symptoms showed themselves in several of those; with one it was dullness, grinding of the teeth, loss of appetite, tottering walk; in another, sudden appearance of an ulcerated lymphangitis of the legs; with all an infectious odor of the fæces. Yet the ulcers of the leg were not those of farcy, they were not indurated, and, again, while these symptoms were severe with the horses that worked, the three that were isolated were improving. With them the rations had been changed; instead of oats, they received grass at will. Was that the cause of the improvement? Another inquiry into the quality of the oats revealed the fact that they contained a large quantity of little black seeds, those of *lupinous albus*. With simple hygienic measures everything returned to its normal condition. A second injection of malleine made for *acquit de conscience* remained without effect.—(*Rev. Vet.*)

ENGLISH REVIEW.

ENLARGEMENT OF THE PROSTATE TREATED BY CASTRATION.—This mode of treatment, which seems to gradually make its way in the domain of veterinary surgery, has been applied by Mr. F. Hobday, of the Royal Veterinary College of London, in two cases with complete success. In the first case perfect recovery was obtained in 13 days; in the second a decided improvement was noticed the second day following the operation, radical recovery occurring also in 13 days. The ordinary symptoms of the disease are strangury, a peculiar gait of the hind legs, inability to walk more than a short distance, difficulty in rising after sitting down, with the presence at rectal examinations of the enlargement of the glands. Both animals were operated upon with antiseptic cares and seemed not to be the worse by their mutilation.—(*Journal of Comp. Pathol. and Therap.*)

"X RAYS" IN CANINE SURGERY.—The application of this comparatively recent discovery in photography has received more attention, we believe, at the hands of English veterinarians than with other practitioners. Mr. F. Hobday records two cases, illustrating its advantages in two cases of fractures. The first was that of a collie dog, which, after jumping some high palings, had become very lame in the left foreleg. When brought to the author the dog had a good deal of swelling, heat and pain on the carpus, which were due to the application of liniment. These subsided by treatment, but the lameness remained. Suspecting a fracture, the leg was skiographed, and, after an exposure of three minutes, a fracture of the third metacarpal was made very plain. Crepitation could not be made out, even after the seat of the fracture was known. The leg was placed in splints and the animal recovered in a month. X rays afterwards revealed a perfect coaptation of the two ends of the bone. In the second case a fracture of the femur was made out and a plaster applied and the case progressed favorably.—(*Jour. Comp. Path. and Ther.*)

HÆMATOMA OF THE EAR.—This affection, which is quite common in dogs and cats, is sometimes rebellious to treatment. On that account the new suggestion made by the author, Mr. F. Hobday, is worth trying, as the one which has given him most satisfaction. He proceeds as follows: "The ear is carefully washed and dried with antiseptic precautions, the hair being removed from the upper surface and edges; the patient is placed on the operating table, or suitably fixed in some way, and the parts painted with cocaine (chloroform may be used if preferred); a longitudinal incision is then made in the under surface, and every drop of fluid or particle of clot pressed out (this is very important). The edges of the interior of the wound should then be carefully dried with antiseptic wadding and aseptic sutures passed at intervals of about one-third of an inch through the skin and cartilage, the knots of the suture being made on the upper (hairy) side of the ear-flap. The object of this is to produce a firm pressure on the internal surfaces, and also to bring the edges of the wound into contact with each other. This having been completed, and the parts again carefully dried, the whole ear is placed in a pad of antiseptic wadding and bandaged firmly to the head. A cap or net placed over this is of advanage. After treatment consists in simply examining the wound once or twice a day, pressing out any fluid which may be present and carefully drying and bandaging with antiseptic wadding."—(*Jour. Comp. Path. and Ther.*)

BURNS TREATED BY IODINE.—Mr. A. N. Porteous records in the *Veterinary Journal* the success he obtained in the treatment of a six-year-old cob that had been frightfully burnt in an explosion of gas. The entire surface of the body of the animal showed the effects of the burn in various degrees—more severe and deep in some places than in others. The case looked very unfavorable. Taking three ounces of tincture of iodine and a pint of water, mixing them well together, the burned surfaces were soaked thoroughly with the mixture and afterwards covered with a paste of starch and water. The treatment was renewed the next day on the places where the dressing had separated from the underlying skin, a perfect recovery followed in three weeks. The driver of the horse, who also had been pretty severely burnt, made use of the same application with equally satisfactory results.

An Abnormal Median Nerve.—At this time, where median neurotomy is becoming quite common in general surgical practice, the peculiar anomaly described by Prof. O. C. Bradley, of Edinburgh, in the *Veterinary Journal*, becomes of the utmost importance to the surgeons, as it is interesting in an anatomical point of view. In describing it, the author says: "The nerve had the usual disposition until it arrived at the upper margin of the tendon of insertion of the biceps flexor cubitii (flexor brachii). At this point a bifurcation into almost equal portions took place, one of the branches was placed in front of the posterior radial artery, the other behind. Then about 60 m. m. below the point of bifurcation, re-union occurred, and a single nerve was again produced about the point at which the nerve and artery buried themselves below the internal flexor of the metacarpus. The re-united nerve, after a course, contributed the customary muscular branch to the flexor in the posterior antibrachial region."

Lead Poisoning.—Mr. D. Pugh, M. R. C. V. S., in the *Veterinary Journal*, publishes an unusually interesting case which occurred in his practice, when seven valuable colts were affected with lead poisoning due to a peculiar circumstance. After having vainly looked at the conditions of the food, water and other surroundings to find lead, he examined the pails, which were placed in the boxes where the animals were kept, and there found the explanation of all the trouble. The pails were the ordinary wooden pails, painted green on the outside and white on the inside. The white coating was observed peeling freely and good sized flakes were loose and could be readily rubbed off. At the bottom of the pail was a layer of oatmeal which had been put in the water, with the idea of chilling it; and mixed with the oatmeal gruel were found many flakes of this dry paint, which the colts would lick up after drinking the water, thus poisoning themselves. In the preceding summer, when they were not required the pails had been put aside, allowed to shrink, and when required, again were filled with water, which caused them once more to expand; this shrinking and expanding of the wooden pails loosened the paint, which fell and got mixed with the oatmeal. The general symptoms presented by the animals were the same in all that were affected, and all received a treatment similar to that laid down in text books, with the result that recovery occurred in all in between seven and twenty days.

DUTCH REVIEW.

VESICAL CALCULUS IN A SHE ASS [*By Schimmel*].—The animal was in good condition, and presented the following symptoms: frequent and severe efforts to micturate, accompanied by partial protrusion of the rectum and vagina, and followed by the emission of a small quantity of cloudy mucoid urine. On exploring through the vulva, the vagina was found the seat of warm œdematous infiltrations, the meatus urinarius was widely dilated, a calculus was felt extending forward on the upper face of the bladder, to which it was adherent. The removal of the stone was quite difficult; the animal had to be thrown and the crushing forceps used. During the severe manipulations, the membranes of the bladder were torn and as a consequence escape of urine into the abdominal cavity took place and death was the result. At the post-mortem, there was found chronic inflammation of the bladder, with thickening and induration of the wall, except where the calculus rested, where the walls were very thin. The right kidney was affected with interstitial nephritis, the left with hydronephrosis. The calculus weighed 197 grammes; its surface was porous, its color dark brown; it seemed made by the adhesive union of several small calculi.

UTERINE FISTULA [*By Beel*].—A milch cow, four years old, since her last calving is losing flesh at sight; she has, in the lower part of the left flank, a piriform tumor, elongated from above to below, from forward backward, fluctuating, yet giving no fluid with exploring needle; this tumor is surrounded by large œdematous swelling. Desirous of waiting for developments, the author advised embrocations of laurel oil. These were followed by an increase in the local symptoms and the appearance of general manifestations; anorexia, fever, and an enormous development of a subcutaneous emphysema, extending far from the primitive dimensions of the tumor. The animal was destroyed. At the post-mortem there was found: an intimate adhesion of the uterus with the walls of the left flank and in the centre of this a fistula, opening at one end in the uterus, at the other towards the mucular layers of the flank; the uterus was filled with a yellowish-red fluid, which escaped through the fistula between the muscular layers. To explain the cause of this lesion the author says that for him the left ovary was first suffering with tuberculosis; that this spread and involved all the internal genital organs and gave rise to the adhesion of the uterus to the flank. As sequelæ of the morbid process, tuberculous abscess with opening on one side in the uterus and later on infiltration of the surplus of the abscess and of the uterine secretion into the layers of muscles of the flank.

TREATMENT OF DOG DISTEMPER BY THE TRICHLORIDE OF IODINE.—Ellerman recommends the daily subcutaneous injection, during eight, ten, or fifteen days, according to the severity of the cases, of 5 or 10 grammes (dose in proportion to the size of the animal) of a solution of 1 to 2000 of bichloride of iodine in distilled water.

PALATINE FISTULAS IN CATTLE.—Brudwall has observed two cases, one in a young bull, the other in a cow, presenting the following symptoms : Dysphagia, fœtid breath, alimentary discharge by the nose, easy prehension and deglutition of soft food and soups ; hay, dry fodders, chewed and swallowed with difficulty are rejected in balls from the mouth. These fistulas consist in two openings, occupying the soft part of the palatine roof, admitting the introduction of the small finger and situated on each side of the median line. The treatment consists in feeding with nutritious soups, and irrigations of the mouth with 2 per cent. alum solutions—turn out to pasture if season permits. The author attributes those fistulas to the weakness of congenital structure of the soft part of the palate, which implies the presence or existence of small openings or of weak portions which, under the impression of the repeated pressure made by the hard and fibrous alimentary boli, enlarge or are perforated and transformed into fistulous tracts.

RUSSIAN REVIEW.

GEMELLAR GESTATION IN A MARE [*By Kvatchkoff*].—An army mare, sent to be covered, remained to the horse for a month, and was served several times by an Anglo-Arab stallion. She aborted ten months later with two well-formed dead colts. Each had its chorion, one being larger than the other. From this the author concluded that the mare was fecundated in two meetings after a certain lapse of time where first conception had taken place. The mare had a slight fever, but recovered readily in a couple of weeks. The cause of abortion was not discovered.

CRIBBING IN A FIVE MONTHS COLT [*By Kvatchkoff*].—A colt, born of a young and healthy mare, did not crib, but at five months began to do it. Many means used to prevent him or cure him failed, and he kept on in the bad habit. What was most singular is that the colt had always lived in liberty, always had plenty to eat, and has never been around cribbing horses. After a while his mother took the same habit, and it was with the greatest difficulty that she was cured of it. The colt has had several attacks of colic. Taking in consideration the conditions under which the trouble developed in the colt, and failing to explain by any cause such an early appearance, the author thinks that to heredity on the side of the sire may be attributed the disease which rendered the young animal comparatively worthless.

DOUBLE CÆCUM IN A COW.—At a slaughter-house Mr. Staedter found a cow which had a double cæcum. One was 80 c. meters long and 9 wide, the other 1 meter long and 80 c. meters wide. Both cæcums were united by a loose connective tissue. The smallest portion constituted a prolongation of the colon, while the other was in communication with the same viscera through the intermediate of a canal 5 c. meters long and ending immediately after in the floating colon. This fact is interesting in the anatomical point of view, as the existence of a double cæcum, rule in birds, is exceptional.

ECHINOCOCCUS ON THE MITRAL VALVE.—On a steer killed for market, Mr. Kvatchkoff found on the mitral valve a vesicle about the size of a seed of corn. At first he took it for a cysticercus, but on more careful examination he observed that the vesicle was single, located in the middle of the mitral valve, spherical, well defined, of a mat white color, and contained a colorless, transparent fluid. Under microscopic examination, with great power, small papillæ were detected on its internal face, close to each other, and in some places folded together. These papillæ seemed to contain granulations. The vesicle was evidently a proligerous hydatic cyst.

TETANUS CURED BY SUBCUTANEOUS INJECTIONS OF LUGHOL (?) SOLUTION.—Grunner had a very serious case of tetanus, with so severe symptoms that the prognosis was considered as fatal. He resorted to subcutaneous injections of iodine under the form of Lughol solution (iodine, 1, 0; iodide of potassium, 5, 0; distilled water, 100.0). Beginning with two injections of five grammes each, he gradually increased the dose to eight injections. When improvement took place, he reduced the injections as well as their strength. Altogether he injected 300 grammes of the solution in 12 days, and on the 19th of the disease the horse was entirely cured.

A YEAR'S PROGRESS IN MEDICINE.

At the commencement exercises of the United States College of Veterinary Surgeons Prof. D. S. Lamb, A. M., M. D., delivered the following interesting address to the students on behalf of the faculty:

At the request of our worthy Dean, I will say a few parting words in this, the closing hour of the third session of the college and the corresponding commencement.

Since a year ago, during which teachers and pupils have been devoting themselves to the routine of lectures, and recitations, clinics and laboratory work, the world of medicine, both in its human and comparative side, has been making progress. This progress has been most marked in the domains of pathology, diagnosis, and treatment.

Pathology has been notably enriched through the work of the experimental laboratory, and especially by the investigations in bacteriology. The study of the pathogenic organisms; their multiplication, especially in the form of spores; the methods, especially the methods of staining, by which they may individually be recognized; their different forms, at different periods, and under different circumstances, especially their involution forms; their strong resemblances and marked differences, and their cultures, by which also they may be identified; their habits and habitats; their relative and actual virulence; the various ways by which they cause death; how they may be destroyed, from the air, from the water, from the soil, from our clothing, houses and food; from the animal system itself; how they may be attenuated, or intensified; the relative and actual susceptibility of individuals to their influence and the influence of their toxic products; how long they can preserve their pathogenic powers, and under what circumstances; what is the best and most efficient prophylaxis against them, and what the best and most efficient treatment of the diseases which they cause.

These and other questions which I have not mentioned, are questions which arise and are to be answered in connection with each pathogenic organism. The number and variety of these questions will give sure ideas of the vastness of the subject, and the immensity of the work which the bacteriological laboratory is called upon to do. The year's work has been large and various. Just how much of the result promises to be useful in the prevention and treatment of disease remains to be seen. Of course in our impatient way, we are prone to forget that the progress of the world is in the main by slow and laborious steps. It is only at intervals that we are dazzled by some great and brilliant discovery, as by the comet in the depths of the space around us. So also in our lives, when we sum up the year's work in a pecuniary way, after deducting our expenditures from our receipts, our actual savings may be very small indeed. So also in science, the sum total of progress in the year may seem very small. But the work has been done, it has been good work and useful, and at the end of the year there is a gain though it may seem disproportionately small.

Perhaps the most interesting and important part of this subject of bacteriological work is that of serums, their prophylactive and curative powers. The subject is broad and deep, the results thus far obtained are at the least very encouraging. We have learned one great truth beyond any question, and that is that a healthy blood serum is very decidedly germicidal, so much so that the bacteriologist often fails to grow his organisms upon it. Thus with the addition of leucocytes, we are, so to speak, twice armed against the germs that may be introduced within our systems. By means of certain methods and processes, we are able to procure serums which when introduced into the animal economy are found to prevent, or to act as an antidote to certain diseases. Especially among the lower animals has this new truth a great commercial value, apart from what I may call its humanity. How these animals may be inoculated; how they may be immunized; how their early infection with disease may be diagnosed; how they may be cured by means of attenuated toxins and anti-toxins. These are some of the questions and problems which confront us and which are being answered one by one for now this disease and then that.

I am aware that this subject of micro-organisms is perhaps becoming tiresome, especially to those who are yet skeptical in regard to it, but it seems to me that the revelations of the microscope and of the staining methods and cultures and experiments of the bacteriological laboratory are not fairly appreciated even by the most enthusiastic students. The light is as yet too dim to see much of this, as well as of other vast vistas in science. I believe that we as yet but remotely conceive the far reaching expansion of our vision in the next decade.

I pass by the other items of the pathological advances of the year and will touch for a moment upon the work of the clinical laboratory. This indeed has revolutionized and is revolutionizing the subject of diagnosis, especially in human medicine. This subject too is too vast to dwell upon long. The study of the blood cells, the leucocytes, the red cells, the plaques, etc., is helping us to a new and unexpected means of diagnosis, which in its way, promises as much variety as the other subject of bacteriology. The number of cells and of each kind of cell in the cubic millimetre of blood at various times; as after a night's rest; after a meal; after meals of certain definitely known constituents; under circumstances of active exercise, of sleep, of sedentary work, in the thousand and one diseases to which man and the lower animals are liable. Not only the number of these cells, varying on occasion, but their size, and shape, mononucleated, multinucleated; their response to the various staining reagents,—here is an almost infinite variety. We are only on the threshold of the great building which our children and our children's children are destined to see. There is now added to our means of diagnosis, an increasingly powerful and certain help, the value of which is too dimly conceived. I could dwell upon this topic a long time, but dare not.

The diagnosis of diseases of the stomach in the human subject especially, is now greatly aided by this same clinical laboratory, by the giving of test meals and their subsequent examination, to determine the digestive power of the stomach; the examination of the stomach contents in important cases, in medico-legal as well as individually, simply diagnostic. Thus in regard to the diagnosis of diseases of the kidney, we have the conjoined examination of the urine and the blood. A little blood from the end of the finger may settle the question of malaria, or typhoid fever, or some other disease. A little blood and a little urine may determine whether we have a malignant disease of the urinary passages,—permits us to estimate the probabilities of a generalization of the malignant growth.

Again in the clinical laboratory in conjunction with the physiological, we may determine the action of medicine and diseases under the most favorable circumstances, so far as the lower animals are concerned, and by analogy we may reason not more or less accurate conclusions for the human subject; the results are promising. Taken altogether, the laboratory work of to-day is carrying the modern physician to a place in practical diagnosis and therapeutics beyond the brightest dreams of the fathers in medicine. To this may be added the progress in sanitation, the municipal, State and personal means by which we may protect our homes, schools, and other buildings, may be improved in matters of light, of heat, of ventilation, our water supply purified; our food supply preserved unadulterated, and our medicines as well; and the thousand other ways by which our municipal and individual health may be preserved, our life lengthened. One by one an enemy falls, and the time should come, and probably will, when the last one shall perish by the wayside.

New industries, new inventions, introduce new dangers which physician and sanitarian must prepare to meet. We have each an individual duty to perform; the proper diffusion of scientific knowledge is helping toward the good time coming, because as the laity are educated they co-operate with the physician and sanitarian. Evidently there is a very definite progress each year in the light of municipal and personal rules of health. Our homes are so much better lighted, heated, ventilated, than those of our fathers; our dietaries improved, our clothing more healthful, provided that fashion will permit.

We bathe a dozen times where our fathers bathed once. We have improved at the same time the housing and surrounding of our domestic animals. Cleanliness, which is so close to godliness, is a thousand times better observed in their case than in older times.

A word to the gentlemen who graduate. I can enter somewhat into your feelings of the moment, as you think of the transition you are making from the state of pupilage to that of the practitioner. You have a future and you hope it may be a bright and happy one, and I hope so, too. But my own experience and observation have shown me that there are two things you ought to make up your minds to do. One is to lead a straightforward, honest and manly life, despising mean and little things and trying to do the best you can; good practitioners and good citizens, trying to improve your time and opportunity, commanding the respect and confidence of your fellows. The other is to remember, as the lamented Garfield was wont to say, "It is the unexpected that happens," or as Cardinal Wolsey said, "There comes a frost, a killing frost, and when he thinks, good easy man, full sure his greatness is a ripening, nips his bud and then he falls," or that other quotation, the author of which I cannot at this moment recall, and whom you will probably recognize as familiar to you, "From care and trouble rest your thought, even when the end's attained, for all your plans may come to naught when every nerve is strained." These things are not said to discourage you. Life's successes are attained by honesty, by vigilance, good judgment, industry, accompanied by a certain indispensable amount of knowledge of your profession, some more, some less. If you preserve your health, and I hope you will, keep yourself free from bad habits and observe the other things I have mentioned, you will succeed, and you will deserve to succeed.

I express the sentiment of the entire faculty, whom I to some extent represent, in commending you to the kindness and moral support of your fellow practitioners, while you attend diligently to the duties of your vocation.

THE PROCESSION OF MODERN VETERINARIANS.

Hillsboro, O., May 4, 1897.

Editors American Veterinary Review:

"An American is the leading veterinary dentist in Australia—Dr. Hoagland. He was recently called a distance of several hundred miles to attend to the teeth of one of the great Antipodean stallions."—*The Horseman.*

The veterinary profession is now the only one not crowded. Neither is it affected by quackery nor contraction of the currency. We have a regular sausage. We come—we come! The snorting of our horses can be heard in Dan. "We are the people," shall be our slogan.

With your permission I will take the pleasure to announce to the veterinary world through your magazine that there will be a great demonstration of the authorities of the veterinary profession at an early date in Carson City, Nevada.

I am enabled by the courtesey of Dr. Solomon Colicwise, V. D., author of "Every One His Own Horse Doctor," to send you a Programme of Order of March:

GREAT DEMONSTRATION
OF
ADVANCEMENT OF VETERINARY SCIENCE.

Order of March.

Dr. Stable Case, A. S. S.,
Commander-in-Chief
Dr. Supersedes Cautery, N. G.,
Aid-de-Camp.

I.
Mounted Gate Porters.

II.
A detachment of U. S. Cavalry horses followed by a corps (e) of non-commissioned veterinarians walking.

III.
Vocal music by Glee Club of self-sufficient Hoss Doctors singing "We shall occupy the land."

IV.
Twenty carriages of veterinary editors of live stock papers, each holding banners inscribed "Vet. Dep't. Free," "A Horse Dr. Free," "Use Blank's Balsam." "Subscribe!"

V.
Large transparency on float illustrating the mammoth veterinary libraries found at each of our veterinary and agricultural colleges.

VI.
Large float on which are a number of Roman Gladiators at mortal combat, thus illustrating the Harmony existing between veterinary colleges and between bacteriologists.

VII.
Large Veterinary College on wheels.
Large slot machine in office.
Drop your Money in
the slot and get your
Diploma.

VIII.
Six Water Carts loaded with "Blank's
Liniment"
which will play at intervals during
the Procession upon

IX.
A detachment of ruined and distressed
veterinarians accompanied by
their care-worn wives and
luckless offspring.

X.
Enormous package of "Blank's Condition
Powders" mounted on tableaux car,

XI.
Followed by a number of Bone
Yard Skates and imported coach
horses, thus illustrating
"Before and after taking."

XII.
His Most Gracious Eminence the
College Horse Skeleton, lame,
impotent, and draped in
mourning, and drawn by
four richly caparisoned
Horses.

Remarks.—We understand that along the line of march there will be erected large and commodious booths, at which the procession will occasionally halt and refresh itself with c. c. s. of emulsionized gelosis a la fricassee, and streptococcus pyogenes on toast.

Liquid refreshments will consist of malarial cachexia prophylaxis served on a revolving stage painted with methylene blue.

In the evening at the amphitheatre Dr. Magic Absorber will deliver an address on "How to Succeed as a Veterinarian."

We trust you will approve of this demonstration and give this coming enjoyable event the widest publicity. Very truly,

S. R. HOWARD, V. S.

A HORSE BECOMES A "RAVIN MONIACK."

A Western correspondent of the REVIEW sends the following *verbatim* copy of a letter which fell into his hands, and as a literary curiosity we reproduce it :

> "'Tis with our judgments as our watches; none
> Go just alike, yet each believes his own."

OHIO, April 12, 1897.

Mr. ——— (Liveryman) By Request of Mr. ——— will Drop You a Line. Mr. ——— Drove in the Stable of Mr. ——— in which I have my Ofice about 5.30 P m April — Horse come Aparantaly in fine shape was not fatued ore tierd in the Least. Some Too Hours Later Some one of the Boys noticed the Horse Had not Eaten his corn, called My atention to no if he was sick Meerly Looked at him seomealy all well next Moring eerley I went to the Stable to Hitch up to Make a call Looked at Horse found he was Sufering from a case of Blinde Stagers in a very acute form Did not give the Horse any thing thot I would wate until Mr. ——— come when I come Back the Horse was a *Ravin Moniack and* Dide in about an Hour I am of the Opinon the caus of the Trubel was Reteenchon of the Watters I took a Bean from the Peanice the size of Patrittg Egg and That Kind of Troube will produce Blinde Stagers or acute Inflomation of the Brane.

Respectufuly

——— V. S.

COLLEGE COMMENCEMENTS.

CHICAGO VETERINARY COLLEGE.

On Wednesday, March 24th, the students and the graduating class of 1896–97 were given a banquet by the faculty at the Sherman House. Justice having been done to the good things set before the participants, speeches and toasts emphasizing the good feeling existing between the faculty and class were indulged in, and when at a late hour the banquet hall was vacated a most delightful evening had been spent. On Thursday, March 25th, the commencement exercises were held in the college auditorium, the large hall being specially decorated for the occasion. The audience, consisting of the friends of the faculty and graduating class, thronged the lecture room, filling it to its utmost capacity. The class colors, purple and white, were conspicuously worn by the majority of those present. The proceedings opened by instrumental music by the Lawndale quartett. On the platform were grouped all the members of the faculty, the chair being occupied by Dr. Jos. Hughes, who in his opening remarks shortly related the history of the school, highly complimented the graduating class on the splendid showing made by them; of the 22 graduates, 13 having passed with honors, of which the following is a list, according to their standing: Drs. M. J. Dunleavy, J. H. Oliphant, G. P. Frost, F. W. Benteen, Jr., F. L. Cusack, E. T. Frank, Geo. Fry, Jas. Smellie, C. A. Bradley, V. A. Holden, H. J. Schneider, W. F. Fish and T. J. Menestrina. Special congratulations were tendered to Dr. M. J. Dunleavy, who obtained the gold medal for the highest general average; to Dr. J. H. Oliphant, who obtained first prize in theory and practice and chemistry, and to Dr. Geo. P. Frost, who obtained the prize in anatomy. Having made this announcement, the chairman conferred the degree of "M. D. C." (Doctor of Comparative Medicine) and delivered diplomas to the following members of the graduating class: Drs. J. H. Oliphant, Macon, Ga.; Wm. Sonerol, Ludington, Mich.; A. M. Taylor, Chicago, Ill.; L. D. Brown, Hamilton, Mo.; F. L. Cusack, Milwaukee, Wis.; E. T. Frank, Warren, Minn.; T. J. Menestrina, St. Louis, Mo.; C. F. Gruner, Chicago, Ill.; Jas. O'Donnell, Milwaukee, Wis.; C. A. Bradley, Wyoming, Ia.; W. H. Scruby, St. Cloud, Minn.; Jas. Smellie, Chicago, Ill.; F. W. Benteen, Jr., Atlanta, Ga.; F. A. Ramsey, Encinitas, Cal.; M. J. Dunleavy, Denver, Col.; H. J. Schneider, Milwaukee, Wis.; Wm. J. Martin, Kankakee, Ill.; L. W. Young, Chicago, Ill.; G. P. Frost, Dublin, Ireland; Geo. Fry, Naperville, Ill.; W. F. Fish, Chicago, Ill.; V. A. Holden, Sparta, Wis.

When the members of the class had resumed their seats, Dr. E. T. Frank gave a reading of "The Horse's Troublous Life,"* which was well received. Dr. M. H. Trumbower, in well chosen and humorous remarks, then distributed the prizes, many beautiful floral tributes being sent by friends of the young veterinarians. A vocal duet and piano solo was then followed by the class prophet, the prophet being Dr. M. J. Dunleavy, who in an exceedingly clever and witty production held up the little peculiarities of his various fellow students, and produced much merriment by his predictions. The valedictory address was a master effort, and was delivered by Dr. L. W. Young, who, during its delivery, on many occasions received the plaudits of the audience. Dr. A. S. Alexander being absent owing to illness, Dr. J. F. Ryan delivered the doctorate address, and was followed by Dr. A. H. Baker, who gave some healthy advice to the young graduates.

BIBLIOGRAPHY.

Diseases of the Dog and their Treatment. By Dr. Georg Müller, Professor, Director of the Clinic for Small Animals at the Veterinary High School at Dresden. Translated, revised and augmented by Alexander Glass, A. M., V. S., Lecturer on Canine Pathology at the University of Pennsylvania. With 93 Illustrations. Philadelphia: W. Horace Hoskins, 3452 Ludlow Street.

The above entitled work, a well-arranged, well-printed, and well-bound volume of more than 400 pages, has been received from the American translator, and we welcome it to our library with more than the usual amount of satisfaction. In a preface the translator, Dr. Alexander Glass, of Philadelphia, gives as the incentive for his admirably performed work that there did not exist a scientific text-book upon the subject of canine pathology, that those in existence were written to serve both the purposes of a popular treatise for the student and as a dog-book for the breeder and fancier; and in this statement he has very nearly described the situation, although many of them are valuable as imparting the personal observations of their authors. His endeavor has been to furnish, by a close translation of the work of that eminent authority, Prof. Müller, a text-book that would be acceptable to advanced students and up-to-date practitioners of canine medicine, and upon a very careful inspection of the work we unhesitatingly predict that he has exceeded his own anticipations, for the book in its compact and well-arranged form seems to cover the ground completely. It is unnecessary for us to say that no one at all interested in the subject can afford to be without a copy in his library.

---

* A poem by the late Prof. Thomas Walley, published in the Review, Vol. X., page 90.

A glance at the table of contents will give an idea of the scope of the work, which includes a general examination of the animal, diseases of the digestive apparatus and respiratory organs, of the circulatory, urinary, and sexual apparatuses, of the nervous system, diseases of true infection, constitutional affections, diseases of the bones and articulations, wounds, hernia, tumors, eyes, ears, and skin.

It is well illustrated and in every way is admirably adapted to fill a place that has long been but inadequately occupied, and we trust the translator and publisher will meet with the success which their labor and enterprise deserve.

VETERINARY OPHTHALMOLOGY. By Geo. G. Van Mater, M.D., D.V.S., Professor of Ophthalmology in the American Veterinary College, Oculist and Aurist to St. Martha's Sanitarium and Dispensary, etc. Illustrated by one chromo lithograph plate and 71 engravings. New York: William R. Jenkins, 851 and 853 Sixth Ave.

In a neat little volume of 135 pages the author has presented the veterinary profession with a work that must prove of the greatest value, since he treats of a subject of much importance and of the most fascinating interest, and thus fills a gap in our literature which has been too long neglected. Prof. Van Mater is peculiarly fitted to prepare a work of this nature, since his experience and special training have been such as are rarely combined. He graduated in veterinary medicine and practiced that profession for some years; but having a taste for ophthalmological research and practice, took a course in medicine with the special purpose of perfecting himself as an eye specialist, in which branch he has been in successful practice in Brooklyn for a number of years. All this time he has maintained a connection of his specialty with veterinary patients by delivering each year a valuable course of lectures at the American Veterinary College, with abundant illustrative subjects at the college clinics. His work well displays his adaptability for the undertaking, for he has given us a very compact and comprehensive treatise. His preface is particularly modest and laconic : "My excuse for perpetrating this work consists in shifting the blame on the students who so often have asked me to recommend something that could be studied without necessitating the perusal of many pages. And so this is the result. I lay claim to but little originality, although what I have told is the result of conscientious study, supplemented by practice, both private and clinical, and careful observation. Let me hope, therefore, that my motives will be taken into consideration by any critic who may deem this publication worthy of notice."

The work itself consists in an introduction, which treats of the physiology of vision, with special reference to the horse, the various complex propositions being made plain by simple diagrams. It is divided into seventeen chapters, which describe successively the orbital cavity, the lids, the lachrymal gland, muscles of the eye, the conjunctiva, the cornea, the sclera, the iris, the ciliary body, sympathetic ophthalmia, the choroid, crystalline lens, the optic nerve, glaucoma, and enucleation. Under the various headings the most common diseases of the structures described are discussed, and where illustrations will be of assistance to the reader they are generously supplied. The colored plate, "The Normal Fundus of the Eye," is especially valuable, and we have no doubt the work will meet with a hearty reception from the profession. The house of W. R. Jenkins, 851 Sixth avenue, New York, has done itself credit in the manner in which it has placed the book in the market.

SOCIETY MEETINGS.

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The regular monthly meeting of the Veterinary Medical Association of New York County was called to order by President Huidekoper at eight o'clock sharp on the evening of April 7th, 1897, at the association rooms in the Academy of Medicine.

On roll-call the following members responded: Drs. C. C. Cattanach, J. S. Cattanach, J. S. Cattanach, Jr., Delaney, Ellis, Farley, Gill, Huidekoper, Hanson, Loomes, O'Shea and Robertson.

The minutes of the previous meeting were read and approved.

Report of Board of Censors.—Dr. Gill (Chairman) reported favorably on the application for honorary membership of Dr. W. Herbert Lowe, of Paterson, presented by members Ellis, Hanson and Ryder. Moved and seconded, that the report be accepted, and that Dr. Lowe be declared an honorary member of the Association. Carried.

Reports of Cases.—Dr. Farley reported a case of injury to a mare by the introduction of a broom handle into the vagina and uterus, evidently by malicious persons, which resulted in death soon after being seen by him. The doctor reported the case when seen to the American Society for the Prevention of Cruelty to Animals, but no notice was taken of it by that society.

Moved and seconded that Drs. Farley, Gill and Hanson act as a committee of three to report at the next meeting on the case referred to by Dr. Farley, and the relations of the veterinarian to the Society for the Prevention of Cruelty to Animals. Carried.

Reports of other interesting cases by members, and free discussions followed, resulting in a motion by Dr. Delaney, seconded by Dr. Hanson, that Dr. Robertson read a paper at the next meeting on the transmission of diseases to the "get." Carried.

Report of Judiciary Committee.—Dr. O'Shea (Chairman) requested the meeting to wait for a complete report of legislative affairs until the next meeting, and stated that he feared the Jury Bill was doomed. He also read a communication from the association's counsel relative to the Mulvey case, in which the counsel advises communicating directly with the county clerk, as the error in allowing Mr. Mulvey to register is evidently his. Moved and seconded that the report be accepted. Carried.

Publication Committee.—The Chair reported for this committee that all the details of the "Blue Book" had at last been gone over, and that it was now ready for the printer. Moved and seconded that the report be accepted. Carried.

The proposed amendment to the By-laws was then read by the Secretary. Moved and seconded that the amendment be laid on the table. Carried.

Moved and seconded that the meeting adjourn. Carried.

ROBERT W. ELLIS, *Secretary.*

The regular monthly meeting of the Veterinary Medical Association of New York County, was called to order May 5th at 8.45 P. M., at the Academy of Medicine, with the President, Dr. Huidekoper, in the chair.

The minutes of the previous meeting were read, and, after slight correction, approved.

The following members responded to roll-call: J. S. Cattanach, Delaney, Ellis, Farley, Gill, Huidekoper, Hanson, Loomes, MacKellar and Murphy.

Board of Censors.—Dr. Gill (Chairman) reported that the committee had no business on hand.

Special Committees.—The committee appointed to report on the case of Dr. Farley and the relation of the veterinarian to the American Society for the Prevention of Cruelty to Animals, asked permission to report progress. Moved and seconded that the report be accepted. Carried.

President Huidekoper then requested Dr. J. S. Cattanach to take the chair, while he gave an interesting and instructive "talk" on the subject of castration in the standing position, giving it as his opinion that the operation could not be properly performed with the animal standing. A very interesting discussion followed by the members.

Publication Committee.—President Huidekoper reported for this committee that they expected to get the "Blue Book" out some time during this month. Moved and seconded that the report be accepted. Carried.

New Business.—Dr. Gill read a communication from Dr. Salmon in reference to the Pasteur Monument Fund. Moved and seconded that the chair appoint a committee of three with the power to act on the communication from Dr. Salmon. Carried.

Moved and seconded that the meeting adjourn. Carried.

ROBERT W. ELLIS, D.V.S., *Sec'y.*

CHICAGO VETERINARY SOCIETY.

A special meeting of this society was called to order by the President, Dr. Walker, on April 26, who stated that the meeting was called for the purpose of deciding whether or not a protest should be made to the Mayor of Chicago against the appointment of a non-graduate and two assistants as veterinarians for the police horses of the city. On motion of Dr. E. L. Quitman, seconded by Dr. Rishel, that a committee of four be appointed by the President to wait on the Mayor and talk the matter over with him. The President appointed Drs. Hughes, Tuthill, Robinson and P. Quitman. Dr. Walker said he also would attend.

Dr. Tuthill read a very interesting paper on the subject of this appointment; he also touched upon the appointment by the Governor of a non-graduate to the position of State Veterinarian.

Moved by Dr. Robinson, seconded by Dr. E. L. Quitman, that the paper read be published in the *Daily Inter-Ocean*. Carried.

On motion, adjournment.

The regular meeting was called to order by the President on May 13. The roll-call showed twenty-one members present. The Secretary presented a letter from Dr. S. E. Bennett to the society requesting that his resignation be accepted, as he had left the state. Motion by Dr. Ryan, seconded by Dr. McGrath, to accept the same. Carried.

A bill for stationery being presented by the Secretary for $3.37, motion was made by Dr. McGrath, seconded by Dr. Henderson, that the Treasurer be authorized to pay the same. Carried.

On application and examination by the Board of Censors the two following gentlemen were admitted to full membership: Dr. D. W. McKillip and Dr. O. R. Dubia.

A report was made by Dr. Hughes, chairman of the committee appointed by the President at the last meeting to interview the Mayor in regard to the appointment of a non-graduate to the office of Police Veterinarian. The Doctor stated that the Mayor claimed that he had nothing to do with the appointment as the office was not the head of a department; and that the Chief of Police was the party to see. The Chief was not seen as the committee did not feel justified in so doing at the present time. After much discussion by the members it was moved by Dr. E. L. Quitman, seconded by Dr. McGrath, that the Legislative Committee consider the feasibility of draughting a bill to introduce into the Chicago City Council making it a law that the veterinary surgeons employed by the city shall be graduates of recognized veterinary colleges; and that the positions filled by such veterinarians be a separate department from the Police and Fire Departments, and that the Legislative Committee report at the next meeting their plans for this action. Motion by Dr. E. L. Quitman, seconded by Dr. P. Quitman, to discharge the committee appointed to wait on the Mayor. Carried.

Under new business Dr. Hughes stated that owing to the appointment of a non-graduate to the position of State Veterinarian, that he intended sending in his resignation as an Assistant State Veterinarian, as he would not consent to work under or assist in any way a non-graduate. This decision was received with applause from the members present. Dr. Ryan followed Dr. Hughes, who also stated that he intended resigning for the same reasons, and he hoped that all the assistants throughout the state would do likewise. A report was made that other assistants not present would also resign. Moved by Dr. E. L. Quitman, seconded by Dr. Robinson, that the Secretary have letters printed, which he shall send to all graduate veterinarians in the state, asking those who are now assistant state veterinarians to resign, and those who are not to refuse any appointment under the present State Veterinarian or any other non-graduate State Veterinarian, should any appointment be offered to them. That the Secretary give the letters the greatest publicity possible in all veterinary journals, farm papers, daily papers and to the medical profession and public generally, both domestic and foreign. That as the Governor has paid no attention to the request of the profession to the matter and has appointed the said non-graduate in direct opposition to the welfare of the profession and the people of the state when requested privately not to do so, that we now as a profession do all we possibly can to redeem the profession from its present condition by interesting the public at large. Moved by Dr. Hughes, seconded by Dr. Ryan, that at the next regular monthly meeting, June 10th, the members of the society have a banquet. Carried.

It was suggested that the Legislative Committee read a paper at the banquet divided into sections among the committee setting forth the proper course of getting a bill through our City Council. Also as to meat and milk inspection for the city and how such offices can be placed under the care of veterinarians.

On motion, adjournment.

LAWRENCE CAMPBELL, *Secretary.*

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The March meeting of this Association was called to order at 7:30 on the 9th by President Hart, with the following members of the profession present: W. W. Martin, H. D. Martien, J. D. Houldsworth, J. Clarence Marshall, Thos. B. Rayner, W. L. Rhoads, Chas. Lintz, W. S. Kooker, W. H. Hoskins, John R.

Hart, Chas. T. Goentner, Francis Allen; also a number of students.

We also had the pleasure of having with us Prof. Marks, of the Adirondack Valley, Mr. S. C. Diamond, of Massachusetts, and as speaker of the evening, R. A. Pearson, Assistant Chief of the Dairy Division of the Department of Agriculture, Washington, D. C.

After the calling of the roll and reading and adoption of the February minutes the regular order of business was suspended that Mr. R. A. Pearson might read his paper on "Sanitary Milk." This was followed by a paper by Dr. Leonard Pearson on "What Prof. Bang's Work Teaches." * Dr. Pearson having been called to Harrisburg, his paper was read by the Secretary. After its reading the discussion was entered into upon both papers.

Mr. R. A. Pearson said that of the foods most liable to adulteration, milk was the most important; it contains all the constituents of a complete food, and when fresh they are in a condition to be easily digested; its purity depends upon the selection, health, care, and feed of the animals, cleanliness of utensils, in the stables, and all places where milk is allowed to be; its age when it reaches the consumer, and its care at that time. It is important that these details should be well looked after when we realize that one-third of all deaths are infants and a large proportion of these are fed on cows' milk. Pure milk does not signify simply milk having a normal chemical composition: it means freedom from any form of contamination. The contamination may be divided into two classes: those affecting quality from a chemical standpoint, *viz.*, skimming and watering, and those affecting quality from a hygienic standpoint, *viz.*, the bacteriological contents and the various fermentations that may be taking place. The most common species of bacteria are those forming lactic acid and causing the milk to become sour by acting on the milk sugar; milk carelessly handled contains two or three times as much acid as carefully handled milk of the same age. Slimy milk is a fermentation, in which the fluidity is partially lost, and in attempting to dip it strings are formed. If the odor on milk is strong when first drawn from the cow, and gradually decreases, it is probably due to food eaten by the cow. If it is not at first noticed but gradually becomes apparent and continues to grow worse it is probably due to bacterial growth. Pasteurization does not necessarily mean that it is clean or pure, it simply destroys the active germs and makes it possible to keep the milk much longer. It has been proven practical and profitable to produce milk having but a few hundred bacteria per c. c., whereas ordinarily the same volume contains many thousand organisms. The chief sources of infection are dirt and water. Cattle should be groomed daily and the udder and surrounding parts thoroughly cleansed with a damp cloth ; before milking hands should be clean and over clothes used for no other purpose. At the experiment station in Wisconsin it has been shown that by using these precautions, the number of bacteria deposited per minute in an ordinary pail during milking is about 2500, while under ordinary circumstances they numbered over 16,000. Old, worn, battered pails and cans should be discarded, as they cannot be thoroughly cleansed ; they should be thoroughly sterilized with boiling water or live steam. Russell found milk taken in sterilized pails contained but 165 germs per c. c., while that taken under the same conditions in unsterilized pails contained over 4000 germs per c. c. When dry hay or other fodder is fed much dust arises and the number of germs falling within the ordinary milk pail may be over 150,000 per minute. The fore milk remaining in the teats is easily reached by bacteria from the outside of udder; all conditions being favorable they multiply with astonishing rapidity, Shultz having found 100,000 germs to the c. c. of fore milk. Milk ordinarily taken contains over 15,000 bacteria per c. c., while with the precautions above suggested there were less than 350 in the same volume or a diminution of 98 per cent. After being drawn the milk should be immediately cooled within 15 minutes to 45° F. or lower to check bacterial growth Outbreaks of tuberculosis, diphtheria, scarlet feber, foot-and-mouth disease, typhoid fever, cholera, scarlatina, etc., have been traced to the milk supply, and in some instances have been widespread in their effects. Kober reported an out-break at Stamford, Conn., in the spring of 1895 of 307 cases ; outbreak Hightstown, N. J., in 1893 of diphtheria, 28 cases ; boy assisted in milking while he had diphtheria. The following should be observed in establishing a dairy plant: All animals suffering from any disease, or not in a normal condition, should be excluded from the herd. Pasture should be free from foul decaying matter, should not have access to ground unnecessarily befouled or swampy. Stables should be convenient, comfortable and healthy, on elevated, well-drained ground, waste products immediately removed to a distance, feed kept apart from stock room. Water supply should be abundant, pure and obtained from deep wells when possible. No unwholesome, spoiled or putrifying food or any material likely to impart unpleasent taste or odor should be used. Animals should have access to shelter at all times and should be cleansed once daily; must have kind treatment and the milk from excited cows should not be used. Milking should take place in a clean, well-ventilated building and the milk then properly attended to. The dairy schools are a good step in the right direction for the production of sanitary milk. The consideration of pure milk and the advantage in obtaining it seems to fall naturally to veterinarians; they should do all in their power to restore the confidence of the consumer, thus increasing the consumption of milk. The importance of this work is better appreciated when we realize that there are about 17,000,000 cows in this country; it is estimated that 5,000,000, of them, whose annual product is valued at $150,000,000 produce milk for direct consumption.

---

* Published elsewhere in this issue of the REVIEW.

Dr. Leonard Pearson in his paper on the work of Prof. Bang quoted him as one of the greatest authorities on tuberculosis of cattle; and gave to him the credit of having first discovered and called attention to many of the facts in connection with this disease that were previously unknown. Prof. Bang's country is one of the smallest in Europe, but its inhabitants are a thrifty, frugal, and conservative people, of a high order of intelligence; they depend largely upon the dairy for their support, and although the country has a population of but 2,200,000 and an area of little over 15,000 square miles, about one-third that of Pennsylvania, there are in Denmark about 1,700,000 cattle (approximately the number in Pennsylvania). In 1890 Denmark exported more than $22,000,000 of butter and more than $2,000,000 worth of cattle; this amounts to more than $10 for each inhabitant of the country. The subject of tuberculosis is of national importance in Denmark, as it involves the principal source of the country's wealth and prosperity, Prof. Bang is at the head of the work there now, and has at his command an appropriation of $30,000 per annum. By the use of tuberculin it was found in testing 53,000 cattle that 38.5 per cent. were tubercular to greater or less degree. Long continued contact is a means of spreading the disease, while short exposure is not always necessarily dangerous. Skim-milk from creameries may become a potent factor in the spread of the disease, part of the whole milk being supplied by tubercular cows, the mixed product is returned to the farm and disease communicated to healthy herds, and it has been given in this way, strange to say, to such a comparatively immune animal as the horse. Tuberculosis is rarely inherited, and in all but the most exceptional cases the calves of tubercular cows are sound when born ; and if fed on milk from sound cows or milk that has been heated to 185° F. they will remain free. Tuberculin furnishes by far the most accurate means of detecting tuberculosis. Yet it is made clear the degree of reaction does not indicate the extent to which an animal is diseased, as we may have a high reaction in an animal that is but slightly diseased, and conclusions must be drawn with great care. Prof. Bang's personal experience is larger than that of any other veterinarian, yet he has seen but three cases of typical reaction in which it was not possible for him to discover tuberculosis, and in one of these there was disease of a chronic and incurable character. After an experience covering 53,000 cases, Prof. Bang is confident tuberculin is not injurious to healthy cattle, and by its use in the conquest of bovine tuberculosis we expect not only large economic profits, but also the annihilation of an important source of human tuberculosis.

After the reading of his paper, R. A. Pearson was besieged with questions bearing upon the production of milk and its germ friends and foe to these. He always had a ready answer. The discussion was interesting, and proved that all fortunate enough to be present were interested. With a hearty vote of thanks to the speaker, the meeting adjourned to meet April 13, 1897. W. L. RHOADS, D. V. S., *Secretary.*

THE VETERINARY MEDICAL SOCIETY OF NEW JERSEY AND VICINITY.

The regular monthly meeting was held at Dr. Sattler's infirmary, at Newark, on Tuesday, May 11, and was called to order at 4:30 P. M., President Sattler in the chair.

At roll-call the following members responded : Drs. Sattler, Turner, Ogden, Loblein, Zucker and Buckley. The minutes of the last meeting were read and approved.

Dr. Knott, of Plainfield, N. J., was elected a member.

Dr. Sattler made a few suitable remarks regarding the welfare of our society.

Discussion and reports from practice were next in order. Dr. Sattler reported having treated a case of chronic rheumatic shoulder lameness with subcutaneous injections of veratrine in alcoholic solution. Two injections were made (the dose being two decigrammes) around painful tissues. The injections were followed by abscesses at seat of puncture. In addition to the veratrine treatment wet cloths were placed over the shoulder and covered with blankets. The animal made a good recovery. Discussion followed as to whether any other counter-irritation would not have produced the same beneficial results.

The nature and formation of scirrhus cord was freely discussed, also vaginal tumors in bitches.

Dr. Turner, of Hackensack, promised to prepare a paper to be read at the next meeting. E. BUCKLEY, V.S., *Secretary.*

MASSACHUSETTS VETERINARY ASSOCIATION.

The regular monthly meeting of the Massachusetts Veterinary Association was held at No. 19 Boylston Place, Boston, on Wednesday evening, March 24, 1897.

Meeting was called to order by Dr. Winslow at 8 o'clock, and the following members were present: Drs. Burr, Cronon, Dyer, Lee, Lewis, McLaughlin, Stickney, Winchester and Winslow. John M. Armstrong, M. D. V., was elected a member.

The Chair appointed Drs. Peters, Blackwood and McLaughlin a committee to make arrangements for our thirteenth annual meeting and banquet for April 28th.

HENRY S. LEWIS, *Secretary.*

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

Secretary Stewart complains that the repeated appeals through the journals for volunteers to read papers at the coming session at Nashville are being very tardily responded to. The following papers are already promised: Dr. Leonard Pearson, "Tuberculosis"; Dr. E. A. A. Grange, "Infectious Mammitis in Cows"; Dr. E. P. Niles (title not given). One or two more are promised from Pennsylvania, one from Minnesota, and one from Ohio. The Secretary is appealing personally to many, and if perseverance will count his programme will be abundantly filled. The members should not so tax their hard-worked officer, but should respond with alacrity.

THE PENNSYLVANIA STATE BOARD OF VETERINARY MEDICAL EXAMINERS

will hold the annual examination in Philadelphia on the second Monday and Tuesday, June 12 and 13. Applicants will please apply at the office of the Secretary, 205 N. 20th St., Phila., for further information. S. J. J. HARGER, *Secretary.*

PORTLAND (ME.) MILK REGULATIONS.

RULES AND REGULATIONS OF THE BOARD OF HEALTH, RELATING TO THE SALE OF MILK WITHIN THE CITY OF PORTLAND, MAINE.

Adopted by the Board May 1, 1897. Approved by Thomas H. Haskell, Justice of the Supreme Judicial Court, May 7th, 1897.

SEC. 1. No person shall at any time, by himself, his clerk, servant or agent, directly or indirectly sell any milk within the city of Portland, except as hereinafter provided.

SEC. 2. Before any milk is offered for sale in this city by any person or persons, the cows from which the milk is taken must be examined in the month of June, of each and every year, by a regular veterinary, first approved by the board of health.

SEC. 3. The examination of all cows shall consist of a tuberculin test, and also of a physical examination, and a certificate of health shall be prepared by the veterinary of all cows so examined, and shall be filed with the board of health. Such certificate shall give the name and residence of the owner of the cow, also the condition of the barn in which the cow is kept and the condition of the water supply furnished such cow.

SEC. 4 Any person or persons sending, bringing or taking milk in any manner whatsoever into the city from cows which have not been examined as aforesaid, or any dealer who receives from any person or persons, or transportation company, the milk taken from cows which have not been examined as aforesaid, and shall sell such milk in the city of Portland, shall be guilty of misdemeanor, and punished as hereinafter provided.

SEC. 5. Any violation of the foregoing by-laws by any person shall be deemed a misdemeanor, and upon conviction thereof, such person shall be punished by a fine of not less than $5.00 nor more than $50.00.

The following veterinarians have been appointed by the Board of Health to meet the provisions of the above regulations: Portland—G. F. Wescott, D.V.S., W. S. Lord, M.D.V., F. W. Huntington, D.V.S., F. B. Gage, M.D.V. Lewiston—H. H. Choate, D.V.S. Biddeford—C. W. Purcell. Deering—G. H. Bailey, D.V.S. Bonny Eagle—H. S. Usher, D.V.S.

NEWS AND ITEMS.

JOHN S. MEYER, D. V. S., of St. Joseph, Mo., has sold his practice and gone into other business.

THE LAST CHAPTER in the celebrated Kneebs case is now recorded in the sale of the confiscated mare "Bethel" to her trainer for $1250.

TAKE YOUR WIVES AND DAUGHTERS with you when you start for Nashville. It is not an experiment; it was a delightful realization at Buffalo. The ladies enjoyed every minute of their sojourn.

G. LEO HAGEN BURGER, D. V. S., of Brooklyn, has sold his practice through an advertisement in the REVIEW and has taken up the study of law. L. D. Ives, D. V. S., of East Wallingford, Conn., became the purchaser.

PROFESSOR KOCH'S cure for rinderpest is regarded with the gravest misgivings in official circles. The cattle treated strictly according to Dr. Koch's method are dying in hundreds.—(*Veterinary Journal.*)

HAVE YOU SENT the subject of your paper to be read at Nashville to Secretary Stewart? Those entrusted with the details of the arrangements need every assistance in order to have things run smoothly.

MALLEIN IN GREAT BRITAIN.—The Midland Counties Veterinary Medical Association and the West of Scotland Veterinary Association endorse mallein as an extremely sure test of the existence or non-existence of glanders.

THE KENTUCKY LEGISLATURE has passed a bill which provides for the killing of all horses that may be affected with glanders and a recompense of $50 per head to the owners of all animals so destroyed.

RETURNING PROSPERITY, scarcity of good horses, on account of the diminished amount of breeding during the past few years, and the spending of the bicycle craze (among those who can afford to keep horses) are making the equine more valuable. The more valuable he becomes the better veterinary patient he will be.

A VETERINARY MICROSCOPIST.—At the exhibition of the New York Microscopical Society, held on April 13, Herbert Neher, D. V. S., of this city, presented a section of the dog's tongue, also a section of the human lung, injected, showing the blood vessels around the air cells. His work was much admired, the latter specimen being considered especially fine.

LIKES THE REVIEW.—A subscriber in Columbia, Pa., writes under date of April 24: "Enclosed please find postal order for three dollars, for my subscription to the REVIEW from April, 1897, to April, 1898. Could not get along without the REVIEW; have very often found one article in a number that was worth more than a year's subscription."

IN DEEP WATER.—Those who think that the veterinarian's abilities cease with his dexterity in treating colics or diagnosing lameness will hesitate to further malign us when they read the following note from an M. D. to a well-known New Jersey veterinarian: "May 22, 1897.—My dear Doctor: Kept my eye open for a glimpse of you Thursday, but of no use. I was anxious to see you. Am writing a paper on 'Headache: Is Auto-Intoxication a Factor.' Heard you had been investigation the subject. Please have pity on a poor mortal and give him some pointers."

VETERINARY EXAMINATIONS AT HORSE SHOWS.—Complaint reaches us of the conduct of the veterinarians in the ring at the Boston Horse Show, who made considerable ado over their inspections, examining and returning to the examination, then consulting and then taking "a fresh hold," until the onlookers could not escape the conviction that something must be wrong with the horse. It is a very dull-eyed "vet" who needs to prolong an examination to satisfy himself of the unsoundness of a horse. As a matter of fact veterinary inspection in the ring is all wrong—as the *Gazette* has for years contended—and the New York and Philadelphia Shows have conceded the point. Boston should follow suit.—(*Breeders' Gazette.*)

EXPORTS OF HORSES.—A remarkable increase in the export of horses from the United States has occurred during the last few years. In 1893 the total number shipped to foreign countries was only 2967. In 1894 it increased to 5246, in 1895 to 13,948, in 1896 to 25,126, and during the first six months of the present fiscal year, ending Dec. 31, the total was 14,232, so that if the same proportion is continued during the remaining six months the total for the year will be 28,464. Nearly half the entire exports in 1896 went to Great Britain, the exact number being 12,022; but it is believed that 1000 or more additional were sent through Canada, the exports to the Dominion being 5305 horses.

TREATMENT OF ACUTE IDIOPATHIC PERITONITIS OF BOVINES [*By Cramer*].—For these affections; which may develop without apparent causes, and which the author attributes to plethoric infection or rheumatismal influence, the following treatment is highly recommended: Administer three times a day 100 grammes of biborate of sodium with a few grammes of juniper berries, dry or moist frictions on the abdominal walls, and cover the animal with heavy blankets. After the second or third day improvement is manifest, in eight or ten days recovery complete. This treatment, with the addition of emollient and antiseptic injections, answers well also for metroperitonitis.

RELIABLE DRUGS.—All veterinarians and owners of stables, also private parties having stables, will find it a profitable investment to keep a small stock of veterinary medicines on hand, to be used in cases of emergency. Eimer & Amend, 205 to 211 Third Ave., corner Eighteenth Street, make a specialty of supplying such medicines, and have just issued a special list of veterinary medicines and sundries, which they consider the most complete list of its kind ever published. The drugs and pharmaceutical preparations sold by them are of the best and purest that can possibly be obtained; the fluid extracts, tinctures, ointments, etc., are manufactured by them in their laboratory on the premises. Special attention is given to the recipes of veterinary surgeons in their prescription department. Eimer & Amend will mail on application one of their veterinary lists on mentioning this paper.

A Befitting Tribute.—At the April meeting of the Veterinary Medical Association of New York County, W. Herbert Lowe, D. V. S., of Paterson, N. J., was unanimously elected an honorary member of that association. This was a very appropriate honor to a very deserving recipient. It has always appeared to us as just and proper that men of the type of Dr. Lowe should be appreciated and encouraged during their period of active life, thus stimulating them to continued efforts, not waiting to bestow the high words of praise in the obituary notice nor incorporated in the resolutions to be spread upon the minutes "and a copy sent to the sorrowing family of our deceased brother." Dr. Lowe is the type of the modern veterinarian—of those who are adding to the material upbuilding of our profession—enthusiastic, earnest, intelligent, dignified, and up-to-date, and the more we have of this kind the better it will be for us all. It was a nice tribute which the society paid to the doctor, and we extend our compliments to both.

The Thermo-Cautery.—Among inventions bearing upon therapeutics and surgery none has achieved more widespread renown than the thermo-cautery, especially so among veterinarians, and true it is that no up-to-date veterinarian can do without an apparatus for this purpose. It was about 1891 that the patent for the original thermo-cautery expired, leaving it to the wide world to improve upon its original form. Messrs. John Reynders & Co., of 303 Fourth Avenue, New York, have been untiring in their efforts to realize a contrivance as free from objections as possible, and, after having had two or three types of cautery, now seem to have settled upon a model of final and extraordinary merit, which within the last year they have been offering to our profession. Not only in theory of construction, but also in practical execution we consider their apparatus a very superior one, and among its votaries we can name such men as: Profs. W. J. Coates, R. R. Bell, Herbert Neher, J. Elmer Ryder, J. D. Burtiss, Ralph Hall, M. E. Knowles (Helena, Mont.); Capt. A. H. Wattles, M. R. C. V. S. (Pittsfield, Mass.); W. H. Prophett (Bridgeport, Conn.); Lemuel Pope, Jr., M. D., V. S. (Portsmouth, N. H.); and many others.

HORSES FOR THE ENGLISH ARMY.—A party of fifteen cavalry officers accompanied by six veterinary officers, left Southampton on the steamer *Danube*, of the Royal Mail Steam Packet Company, for Buenos Ayres on Friday last for the purpose of selecting as many as 8,000 or 10,000 horses suitable for campaigning under the most trying circumstances. The party is in charge of the Assistant-Inspector of Remounts, Colonel W. R. Truman, and the instructions to the officers, who left at short notice, were to buy serviceable horses of a higher grade than usual, and to make selections without so much regard to the prices to be paid as is customary. Orders for the insertion of advertisements in Argentine papers, making known the fact that an important order for a large number of vigorous, up-to-weight horses would soon be wanted by a ready cash purchaser, had been sent ahead. The detachment from the office of the Inspector General of Remounts will remain in South America all the summer, if necessary, in order to secure the horses required, which will then be shipped direct to South Africa. This is the first time that the British Government has seen fit to send an important commission for the purchase of horses to South America, the usual sources of equine supply being Ireland, the Continent, and North America [The United States and Canada.].—(*The London Daily Mail.*)

THE HORSELESS CARRIAGE.—The progress of the motocycle is not so swift as to take one's breath away. The horseless age is hardly yet in sight. Amid the hullaballoo that has been kicked up about the motor vehicles some people have been deceived—being ready to accept at this time almost any wild promises of invention that may be made in the name of science. The motocycle so far as developed has not only its inexorable limitations but also its inherent objections. It is of interest to note the expression of the opinion of Mr. Henry Labouchere, the famous editor of London *Truth*, who is certainly as free a lance as ever wrote: "I have no special feeling of like or dislike toward a horse—my sentiments toward him are those I entertain toward a pig or donkey, or any other useful animal; nor have I ever understood why anyone should be deemed the better man because his affections are centred upon a horse. The object of a carriage is to convey people and goods. The carriage is to my mind the best that at least cost adequately fulfills this object. If motors, by all means let us have motors. Last Saturday I betook myself to Westminster Bridge to see the procession of these vehicles on the way to Brighton. I was disappointed. No one seems to have grasped the fact that there must be a new departure in their form. Judging from those in the procession their makers have simply sought to make them as near like carriages drawn by horses as possible. Apart from form, the lighter ones seemed to vibrate greatly. By my side stood a talkative lady whose acquaintance I had not previously enjoyed. 'If the people inside of them were cream,' she said, 'they would be butter before they got half-way to Brighton.' I suggested to her that the petroleum cars smelt unpleasantly. 'Stink,' she said, 'is the word for them,' and it certainly was." Those who recall our report of the fiasco of a motocycle test in this city in 1895 will observe that no progress has been made in eliminating the pungent and objectionable odor of burning petroleum or gasoline. Few smells are so penetrating and offensive as these fumes and inventors yet have need for a deodorizing "tender" to be carried along with vehicles. A general survey of the situation does not warrant any alarm on the part of those engaged in the production of fine horses or draft horses. The drudge horse has already been superseded.—*Breeders' Gazette.*

VETERINARY SANITARIUM AND PRACTICE FOR SALE.

On account of the death of Lucian T. Bell, M.D., V.S., we offer for sale or rent the new and model veterinary sanitarium, No. 358 South Second Street, Brooklyn, N. Y., complete, with instruments, books, etc. Also the large and paying practice connected with same. For terms call or address John A. Weik, 331 Putnam Ave., Brooklyn, N. Y.

BACK NUMBERS OF REVIEW.

I want REVIEW of March, 1895. Will pay regular price. I will dispose of January, and March, 1892, and June, 1896. Address L. D. LEGEAR, V. S., 201 W. 6th st., Austin, Texas.

Prof. W. L. Williams, of New York State Veterinary College, Cornell University, Ithaca, N. Y., will pay 50 cents each for Nos. 5 and 7 of Vol XIX.

Dr. W. B. Welsch, of Marshall, Mo., will pay 50 cents for No. 12 of Vol. XIX.

The editors will pay 50 cents for Nos. 5, 7 and 12 of Vol. XIX.

AMERICAN VETERINARY REVIEW.

JULY, 1897.

EDITORIAL.

STILL SILENT.

In September of last year a great event took place in the State of New York. Yes, in the United States—an event which had been slowly prepared for years by the work of some individuals through the country, who, regardless of difficulties, obstacles, possible failures or financial losses, labored and are still working in behalf of their profession. The New York State Veterinary College was formally opened. The first of its kind in the country; built with funds from the State; endowed by the State; supported by the State; two or three hundred thousand dollars had been given by the great Excelsior State of the Union, and it pleased us to consider and believe the creation of the new school as an acknowledgment, an appreciation of the importance of the value of the work carried out by the few individuals referred to above—by the *private schools of veterinary science.* It was a great realization—at last! That which had been demanded,—which had been looked forward to for long years, that to which every one was prepared to give a friendly, a helping hand.

The opening took place, and the address delivered by the newly elected director was published in many veterinary journals. It was not to acquit an obligation that the journals made this publication, but with the pride of telling to every one, to the world at large: At last America is started; she is entering into the movement of veterinary elevation; now, watch for great work in that science.

The first excitement of the publication over, a quieter reading of the address brought out some remarks which seemed rough, improper, undeserved; they had escaped attention in the first transport caused by the event, but appeared so much out of place that they had to be read over again to be sure that there was no error, that they had been written and uttered in public, and that they were there printed. And then, a still more injurious attack was noticed: the private schools had not only been useless, but had done harm, they were accused of villainous acts. They claimed all to have done their work with a good intention, with disinterested motives. But, no, said the author of the address; some of them, *more than one*, had gone so far as to prostitute their pretended professional love, they had sold their degree. The measure was full—the accusation direct—and demanded a reparation at the hands of the newly appointed director of the new school.

The REVIEW, as the organ of the profession, as the oldest representative in the country of the professional honor of all, felt that a duty was imposed upon it to ask for an explanation. It did so. First, in what must be admitted a moderate and commendable notice in January of this year; we told of the sad impression that the reading of the address had made upon us, and we thought upon those who were so directly accused. In February, we asked Prof. Law two simple questions, to which we felt he would be too ready to answer. We have waited *six months*, and not a word.

Silence is his motto, in this occurrence at least.

Will the profession be satisfied, and can it remain under the opprobrium of the attack? Will the private veterinary schools rest satisfied with the accusation made against their honesty? Will the graduated veterinarians of the United States, whose large majority is from private schools, consent to be suspected of holding degrees bought at so much a piece; or shall the newly appointed director consent to answer the questions we put to him six months ago: *If one, which do you accuse? If more than one, how many? Name them.*

AMERICAN VETERINARIANS, BE WATCHFUL.

The Minister of War of Belgium has officially inquired of Secretary Wilson, United States Department of Agriculture, whether horses suitable for cavalry remounts can be purchased in this country, and if so in what numbers, in what localities, and the manner in which these horses are bred. This is not the first time that such official inquiry has been made by a foreign government. During the office-tenure of Secretary Rusk the British government asked the same question, the Secretary made exhaustive investigations, and reluctantly replied that horses such as described by the British War Office could not be obtained at that time in sufficient numbers to advise the foreign government to establish a purchasing agency in the United States.

The fact that these official inquiries by foreign governments are renewed proves that some of them are turning towards the United States as the country from which they must ultimately draw their supplies. Some of our leading agricultural papers, always alert in the interests of the American breeder, have taken up this subject with a great deal of vigor, and are urging the Secretary of Agriculture to do something for our horse-industry, which, compared to the interest paid to other domestic animals, has been sadly neglected by official advice and guidance. Yet the demands made by some of these papers are anything but practical, and would utterly fail in the attempted result. *The Horseman* suggests that the United States War Office should send types of United States cavalry-horses in charge of officers to the agricultural fairs to practically demonstrate to the farmer-breeder how a cavalry horse really looks. To this we must reply that the United States cavalry has no fixed type of saddle horse, the remounts being gathered by contractors and purchased by agents of questionable ability. Thus it happens that the United States cavalry-horse is about as different in conformation, endurance and intelligence as are their riders in language and appearance. A better advice comes from the *Breeder's Gazette*. This paper suggests that Secretary Wilson should send abroad "experts" to study the breeding of the cavalry-horses of the European nations, these experts to act as instructors and supervisors in the horse-breeding districts of the United States. We shall not flatter ourselves by assuming that our agricultural contemporary means by expert "the veterinarian." Yet this happy suggestion comes right in with the veterinary profession, and sooner or later—perhaps after some struggling—the American veterinarian will be this expert instructor and supervisor. The old European governments have found this all out by a long series of trials, in which practical horsemen and veterinarians were rivals, and France, Germany, Austria, Russia, and even Turkey—whose cavalry has just won such laurels—employ a large number of veterinarians as directors of studs, as remount-inspectors and instructors in the breeding districts. And while we ourselves may have no direct use for large numbers of cavalry horses, we shall have an unlimited market for them for such countries as England, Belgium, Holland, Norway and Sweden, which have never been able to supply their own demands.

There may be few American veterinarians fitted, at present, to take up this specialty. The exterior conformation of a horse and its breeding has been a sealed book at most of our colleges, and the average veterinarian, especially west of the Alleghanies, thinks well of himself if he can talk of the trotter, a horse in which pedigree counts all, conformation little, and beauty nothing, and whose injudicious and limitless breeding has nearly ruined the horse industry of this country. The other typical American horse, the Kentucky saddler, is little thought of, although he is a well-shaped, beautiful, intelligent and remarkably docile animal, the result of high art of breeding. But this horse is too fine for warfare. What the foreign governments want is a strong, well-built horse, with short back, high withers, high neck, strong limbs and joints, a fearless jumper and charger, who can carry weight and stand hardship. Such a horse we have not the broad land over; yet we could supply it at a good profit, for the average price offered by the foreign governments is $200, which is considerably higher than the average price paid for horses purchased for export to Europe during the last two years. All we need is to cease breeding horses in a slip-shod manner and apply the science and art of breeding for special purposes, as followed on the continent of Europe.

We should not neglect this first golden opportunity to make our claims as experts in this branch. Faint as may be the start, it must gradually develop into a new specialty of veterinary art. It was by similar demands from foreign governments that the United States Department of Agriculture instituted a meat-inspection service, from which now a large number of happy veterinarians draw secured incomes, giving in return able service. We know little as yet of the new Secretary of Agriculture's disposition toward the application of veterinary skill, but we know that the Chief of the Bureau of Animal Industry, who has always shown a keen interest in new issues, can do much to properly advise the Secretary to extend the usefulness of the American veterinarian in the direction indicated and which naturally falls within the work of his Department.

THE TUBERCULIN TEST IN MASSACHUSETTS.

In another part of this month's REVIEW will be found two very important and interesting reports upon this subject. They constitute the majority and minority reports of a special joint committee of the two branches of the Massachusetts legislature upon the result of their investigations to determine the accuracy or fallacy of tuberculin as a diagnostic for bovine tuberculosis. The Cattle Commissioners of that State had condemned with tuberculin 130 head of cows in the vicinity of Lowell, and the legislature took up the question at this point by appointing the above committee, who were empowered to employ five experts (veterinarians), who should superintend the destruction and autopsies upon the condemned animals and report the result to the committee, who would in turn formulate a conclusion to the legislature, expecting by this means to obtain a settlement of the much discussed question as to the intrinsic value of the methods which have been maintained in the Bay State, and thus be enabled to shape future legislation relative thereto. That the experts—Drs. Harold C. Ernst, Theobald Smith, Geo. N. Kinnell, F. S. Billings, and Charles R. Wood—should have differed so widely in their estimates of the accuracy and value of the serum is to be greatly regretted, as the public at large are slow to endorse any scientific proposition which is the subject of internal dissension. A majority of the experts (Drs. Ernst, Smith, and Kinnell) regard the result as phenomenally accurate, the percentage of error being so infinitesimal as to thoroughly establish its practical reliability as a diagnostic for the disease in our herds without the aid of physical signs. A minority of the experts (Drs. Billings and Wood) have failed to appreciate its prophetic constancy, and have disregarded the wording and spirit of the resolution which called them into being, and, ignoring the wonderful lack of error in the test, have promulgated their own theories and opinions in lieu of the naked facts of the experiment. The act did not ask for the display of anybody's theories, but it did ask if the reaction in a given bovine was caused by tubercular infection, and the autopsy said that it was. If such meat and the milk from such a cow is fit for human consumption is another matter, and did not enter into the question then under consideration.

As a scientific test of the value of tuberculin to detect the presence of tuberculosis, even in the most initiatory stages, the reports referred to—which will be printed in full in the next issue of the REVIEW—must be considered a perfect vindication of its wonderful accuracy and reliability for practical work. The policy of the State in the matter of reimbursement is a subject with which we have nothing to do.

GET READY FOR NASHVILLE.

This was the burden of our song last month, is this month, and will be next month, and we present in the news department of this issue of the REVIEW additional reasons why you should not disregard this injunction, for, although far from complete, the intellectual programme there presented is quite sufficient to attract all those who can possibly avail themselves of the privilege of attending. We have private information from Nashville which indicates that even thus early the workers are busily engaged in making preparations for the entertainment of the convention, and nothing is to be neglected which can add to the social enjoyment of the guests. "Get ready for Nashville."

A WOMAN VETERINARIAN.—The intelligence comes from Scotland that at last a woman has become a graduate in veterinary medicine; that she has passed a creditable examination, and awaits the licensing of the Royal College of Veterinary Surgeons. But that staid and conventional institution has hesitated at the last moment to receive the decision of the court as to their right to grant a license to a member of the fair sex to practice the healing art among domestic animals. While we are not sufficiently conversant with British law to criticise the action of the Royal College, it appears to us that no power can possibly be exerted to withhold from the applicant the opportunity to become a licentiate. We have always believed that the reason women have not espoused this profession before was because of the peculiarities of its diversified requirements, but we have never heard any one urge the point that they did not have a perfect right to. Ability is the only guide; not sex. Her acceptance is confidently anticipated, and we extend our hearty congratulations.

MINNESOTA'S AMENDED LAWS.—Elsewhere will be found the recently passed amendment to the veterinary law of Minnesota, which is quite an improvement over the act of 1893. This State has fared better at the hands of its legislature this year than most of those in which veterinary legislation has been sought.

ORIGINAL ARTICLES.

THREE CONSECUTIVE RECOVERIES FROM GLANDERS.

By W. L. Williams, Prof. of Surgery, New York State Veterinary College.

In Bulletin No. 4 of the Montana Agricultural Experiment Station, which was largely reprinted in the American Veterinary Review, Vol. XIX, p. 6, we had occasion to note the possibility of recovery from glanders, either with or without treatment, and although such a possibility is in full accord with the veterinary science of to-day, the popular mind is still strongly imbued with the belief that this malady is uniformly and more or less rapidly fatal. Bearing upon this phase of the disease it is interesting to note the results of observations and experiments carried out on three glandered horses, the property of Mr. Moses Decker, Bozeman, Mont.

Two of these animals are noted in Bul. No. 4, as Nos. 6 and 7, in table on page 104, but without special detail, that presented being unfortunately vitiated by typographical errors on page 105, where in 4th line from top "No. 5" should read "No. 6" and in 6th line, same page, "No. 5" should read "No. 7." These two animals, Nos. 6 and 7, were a pair of well-bred, light road mares, used almost exclusively for light road work and were constantly together.

In Dec., 1893, I inspected two horses on Mr. Decker's premises which had been kept with Nos. 6 and 7 and which were clearly affected with glanders, the septum nasi of one of these being shown in Fig. VII, Bul. 4.

On this trip to inspect the above glandered horses, Nos. 6 and 7 were used for driving, and it was noted that No. 7 appeared somewhat out of health, with harsh, rough coat, but nothing definite could be detected. About a month later, however, she developed all the symptoms of acute, nasal glanders, discharging freely from both nostrils with the usual tumefaction of submaxillary lymphatic glands, leading the owner to conclude from his former experience that she was seriously glandered and must soon succumb, causing him to determine to destroy her without official inspection, but delaying action ; the mare being isolated, she improved, regaining flesh and vigor until in March, 1894, she showed no constitutional disturbance, but a personal inspection made revealed unmistakable evidence of glanders in the characteristic enlarged, nodular, painful and adherent submaxillary lymphatic glands, the glutinous discharge from the nostrils and the characteristic erodent ulcers upon the nasal partition. She continued to improve until on July 3, 1894, when she had apparently recovered except slight nodular swelling of the submaxillary lymphatic glands, at which time a test with mallein was undertaken, with the results as recorded in the table on page 104, Bul. 4. At the same time her mate, No. 7, and another mare, No. 8, both of which were apparently sound and believed to be so, were selected as "control" animals to act as a check upon the test on No. 6. The test revealed that No. 7 was, like No. 6, glandered, and this opinion was further demonstrated by succeeding mallein tests, while No. 8 withstood this and subsequent tests perfectly. Nos. 6 and 7 were safely isolated and kept for observation.

In the meantime Mr. Decker and his father had a considerable number of unbroken horses in a band some miles distant, but which had, at an earlier date, been in contact with those killed in Dec., 1894 as well as Nos. 6 and 7 and some other horses killed on the farm for glanders, prior to my connection with the station ; and some time in the fall of 1894 a deputy State Veterinarian killed two animals in this band on account of glanders, after which the remainder was brought back into the valley and wintered on the farm, when in the spring of 1895 a three-year-old developed the characteristic symptoms of glanders in mild form, and was promptly isolated from the healthy and placed in the enclosure with Nos. 6 and 7. We will designate this patient No. 9.

The three affected animals were allowed the liberty of a small pasture, were well supplied with good, nutritious food, had access to excellent running water, had reasonable shelter in very inclement weather and were not worked. No. 6 continued to improve from the time noted above, until to all outward appearance she was wholly recovered in March, 1895, and has so remained. No. 7 has at no time shown external evidence of the disease. During the present season (1896) Nos. 6 and 7 have been put to ordinary work and have done it efficiently and vigorously. No. 8 continues to all appearances sound. No. 9 began improving shortly after inspection, March 22, 1895, and all physical signs of disease ceased during the same summer and have not returned.

Subsequent to the isolation of No. 9, in March, 1895, no new cases have been developed upon the farm.

Placing no dependence upon physical signs alone in this disease, the animals in question were studied, by the aid of mallein, as closely as their distance from the station and my college duties would permit.

The subjoined tabular record of mallein tests indicates briefly the course of the disease.

No. of Animals.	Numbers are as in Bul. 4.			Average temperature on day preceding the test.	Temperature at time of using mallein.	Highest temperature after injection.	No. of hours after injection when highest temperature was reached	Increase of temperature in degree Centigrade.	Character of swelling at point of injection.
	Amount of mallein used. c.c.	Number of test.	Date of test.						
6	1.	1	July 3, 1894	38.3	37·7	40.3	10	2.0	Typical
	0.75	2	March 22, 1895	37·9	37·	40.5	12–30	2.6	“
	0.5	3	April 14, 1895	37·9	38.1	39·1	7	1.2	Absent
	0.7	4	July 31, 1895	......	37·9	38.8	12	.9	“
	0.8	5	June 6, 1896	38.4	37·5	39·	12	.6	“
7	1.7	1	July 3, 1894	38.2	37·5	39·7	12	1.5	Typical
	0.75	2	March 22, 1895	37·7	38.4	40.3	6	2.6	“
	0.5	3	April 14, 1895	37·5	......	39·5	11	2.0	“
	0.7	4	July 21, 1895	......	37·5	38.9	11	1.4	Absent
	0.8	5	June 6, 1896	38.5	37·5	38.3	9–30	0.2	“
8	1.8	1	July 3, 1894	38.1	37·3	38.4	12	0.3	“
	0.8	2	March 22, 1895	37·6	37·	37·8	8	0.2	“
9	0.8	1	March 22, 1895	38.4	39·	40.4	4	2.0	Typical
	0.7	2	July 21, 1805	......	38.3	40.1	12	1.8	“
	1.1	4	June 6, 1896	38.6	37·4	39·1	11–30	.5	Absent

The mallein used for above experiments was furnished by the Bureau of Animal Industry. Nos. 6 and 7 were animals of about 900 lbs. weight, while Nos. 8 and 9 were of about 1200 lbs. weight, hence, 0.75 c. c. mallein for Nos. 6 and 7 equals 1 c. c. for Nos. 8 and 9, which is the average dose advised.

There is no positive evidence to show that the use of mallein exerted any curative effect in either of these animals, although various experimenters have concluded that it is capable of exerting a favorable influence upon the disease. It shows, however, that repeated use of mallein on an affected animal is at least not injurious. As stated in Bul. 4, the disease shows a stong tendency to spontaneous recovery in Montana if the animal be well kept, and not confined in stables except in very inclement weather.

The disappearance of the disease on the infected farm after killing some of the affected and isolating the others shows, too, that if due care is taken it is not extremely difficult to eradicate with the means at our command. By many laymen and even some veterinarians this affection is termed "catarrh" and ascribed to "taking cold," but once the diseased are isolated the healthy animals cease to "take cold." The time required in which recovery from glanders may take place, the uncertainty of its taking place, the difficulty of knowing if an affected animal has really or only apparently recovered, the danger through accident to other animals or to man all militate strongly against any treatment yet proposed and renders it impracticable, unsafe and only admissible as yet under peculiarly favorable surroundings as an interesting and valuable experiment, and generally leaves the summary destruction of all affected animals the sole efficient means for its control or eradication.

TENNESSEE'S STATE VETERINARIAN receives the munificent sum of $50 per month, although the Board of Health, to which he is subservient, was voted $2500 for a veterinary department. It would have been better to have left it as it was—a position purely honorary.

CANINE PRACTICE, WITH NOTES ON CASES.

By Dr. R. H Harrison, Atchison, Kansas.

A Paper read before the Missouri Valley Veterinary Medical Association.

At the present time, when the price of horses is so low that an owner hesitates to call a veterinarian, on account of the expense of treatment, a surgeon can aid his reputation and pocket by skill in his treatment of dogs, and their owners. Very often a very profitable practice can be built up by a surgeon's proper treatment of the owners of dogs. Being a lover and owner of dogs myself, I can appreciate a little sympathy for them in some one else, and a surgeon can always gain friends, and legitimate and profitable advertising by his judicious sympathy with the owner and friend of his patient.

The question of expense does not enter so much in canine practice as in equine, for it is not a question always of their pecuniary value as it is that they are loved.

In this paper I present quite a number of rather unusual cases met with in my practice.

Case No. 1.—Vesical calculus in a black French poodle, eight years old, animal belonging to a traveling showman. Being of a cleanly habit, had been treated by a veterinarian in the East for retention of urine, caused by a trip from the Pacific Coast to the East. The treatment rendered was the passing of a catheter, which, from the owner's statement was very difficult, and in withdrawing the instrument, the end beyond the opening was broken off. The owner was assured that the piece of catheter would be absorbed, or decomposed by the urine, and passed away. For a year afterwards the animal seemed apparently normal, when suddenly much pain was manifested by cries when micturating, which also interfered with the animal in performing his tricks. Urine would be passed a few drops at a time. When brought to me, the patient was in great distress, exhibiting intense pain, constant tenesmus and great uneasiness. Manipulation over the abdomen showed a large, well defined tumor, very hard to the touch, quite tender to pressure. Examination per rectum, which was very badly impacted with fæces, showed the tumor to be the distended bladder. No foreign body could be felt at this time, on account of the distension. The animal was placed on its back, and the owner having wonderful control over it, a hypodermic needle was introduced through the abdominal wall, at the linea alba, into the bladder and a quantity of high-colored urine evacuated. Examination per rectum revealed the presence of a foreign body in the bladder. The animal was prepared for operation by diet and mucilaginous drinks, together with a mild cathartic, etherized, and an incision or puncture made in the perineum into the urethra and a sound introduced, to make sure that the foreign body was a calculus, or a growth.

A calculus being made out, an incision was made on the linea alba, an inch anterior to the pubes, and the bladder caught with forceps, and brought to the edges of the incision; antiseptic rubber cloth and cotton were placed on both sides of the incision to act as a dam and prevent escape of urine into peritoneal cavity. Using the sound in the urethra, as a guide, the bladder was opened by a longitudinal incision, and a calculus, six-eighths of an inch long, half an inch wide, flattened from above to below, its external surface studded with rugosities, and on section its nucleus was the end of the catheter lost during the previous catheterization. The bladder walls were stitched together with the abdominal walls, a soft rubber catheter introduced through the perineal opening and retained in place by a stitch. The only attention paid to the abdominal incision, was to reinforce the sutures with flexible collodion, and surgeon's plaster around the loins. The catheter was removed and cleaned daily for a week, when it was removed, a stitch taken in the perineal opening, the urine passing through the urethra normally. The sutures in the abdominal vesical incision were removed in 48 hours, the wound healing by first intention. Diet after the operation consisted of meat once a day and raw liver every other day, and the administration of sanmetto internally, and during the time the catheter was retained an occasional suppository of morphia per rectum to control the tenesmus. The patient was discharged in three weeks, passing his urine naturally, and beginning to improve in coat and condition. The owner reported several years afterwards that the animal had been in perfect health for two years after the operation, and was killed in a railroad wreck.

[Note.—Operation similar to one performed for Prof. Stein of the New York Hospital.]

Case No. 2—Vesical calculus, Chesapeake Bay retriever bitch, three years of age. The only history with the case was that there had been constant passing of bloody urine with severe tenesmus; animal in a debilitated condition and suffering much pain. The diagnosis of calculus was easily made by passing a sound into the bladder through the urethra. The patient was given a mild cathartic, an enema, and a hypodermic injection of morphia, which rendered the animal so quiet that the urethra was dilated with the sound, and an attempt made to extract the stone, but, being too large, the Bigelow lithotrite was introduced, and the calculus crushed and the *débris* washed out. In the *débris* was found a shot, which apparently had formed the nucleus. Animal did very well, and lived for several years afterwards. In this case, the animal, being a famous retriever, my suspicion was that possibly she had been shot, and one of the shot had entered the bladder. A year after the operation, I was told by the breeder of the bitch that in those animals he sold he always introduced bird shot into the vulva of bitches to render them barren.

Case No. 3.—Fracture of os penis, with amputation of the organ. Patient a 50-lb. English bulldog, six years old, said to have been injured in a fight, and showed much œdema of the penis, together with a suppurating wound midway between extremity of the penis and arch of the rectum. A probe detected the roughened bone readily, and introducing a probe into the urethra, a passage was found leading to the wound. At first hopes were entertained of making an artificial meatus, but, later necrosis of the bone being set up, the prepuce was incised and the penis, together with the bone entire, amputated to within an inch of the ischial arch. The skin of the prepuce was sutured and the stump sewed into the skin, having made a circular opening through the skin, and incising the urethra longitudinally for an inch and securing the edges to each side so as to form a notch. The complications which ensued were very interesting. The animal recovered from the etherization, after prolonged artificial respiration, and an hour afterwards suffered from severe nausea, which caused the sutures holding the stump and flaps of the urethra to tear through. A soft catheter was introduced and allowed to remain during the night and no attempt was made to renew the sutures. The next morning the catheter was found out and a large œdematous swelling of the prepuce and the left inguinal region, and urine was dribbling from the stump. A catheter was again introduced and the parts sutured again, the catheter being retained by suture. The œdema yielded to treatment involving the prepuce, but a slough of skin took place at the left inguinal region the size of the palm of a man's hand. Result: the prepuce healed kindly, a perfect union was established at the point of amputation with the skin, the divided urethra showed a good V-shaped orifice, and the granulating surface following the slough healed nicely. The animal in lying down would pass a little urine, and in rising it would urinate the same as a bitch. During the act of defecation, the urine would be voided with a gush. The animal was killed in a fight with a bitch soon after he left me. Would it have been expedient to have castrated him at the time or later? he having been used for stud, as well as fighting purposes.

Case No. 4.—Umbilical hernia in dogs and puppies can be as a rule very satisfactorily treated by injecting a sublimated solution of chloride of sodium at the four cardinal points, an inflammatory exudate is thrown out, an adhesive inflammation induced, so as to close the umbilicus completely, and at the same time return the omentum or bowel. I have operated upon twenty puppies and five adult dogs with a successful result.

Case No. 5.—Comminuted fracture of the orbital process of the frontal bone in a pug, with dislocation of eye-ball; accident resulted from a kick; the eye-ball was hanging on the side of the cheek by the optic nerve, much extravasated blood and œdema; seen one-half hour after injury; fracture could be readily made out, as a fractured end of bone was protruding through a wound. The owner desired eye to be saved if possible. Operation, performed under a warm spray of creolin solution, consisted in the removal of three pieces of bone, the suturing of the wound, the return of the eye-ball, after oiling it with almond oil and retaining it in position by a stitch through both eyelids and surgeon's plaster reinforcing the sutures, a dressing of oil, iodoform, absorbent cotton, and a bandage. The patient made a complete recovery; the only complication was a fistulous tract, from which was removed a spicula of bone, which resulted from a slough of the fractured end of the process. After the animal had been discharged a month, was returned to have the injured eye examined, and on examination a dislocated lens was found, which interfered more or less with vision. As the owner had noticed it for some weeks and the eye otherwise appeared normal, advice was given to return if animal showed pain or swelling.

Case No. 6.—*Strabismus*, left eye, cocker spaniel, two years old. This condition, a very rare one in the lower animals, was very well marked, so much so as to disfigure an otherwise very handsome animal. The defect was said to be congenital. The eye wasturned outwardly, and the membrana nictitans at the internal canthus protruded across the inner half of the eye. The operation consisted in rendering the eye aseptic and cocainized, and, with a pair of curved scissors, cutting the conjunctiva at the external canthus and, with a stitch holding the incision open, cutting the external rectus muscle. The operation was a success, straightening the eye, leaving the membrana nictitans in almost its proper position. A point to be remembered in surgery, where dogs are the subjects, is that the best antiseptic is creolin. Carbolic acid and corrosive sublimate are poisonous.

Case No. 7.—Fæcal impaction; mastiff, two years old. Animal unthrifty, thin, with a voracious appetite. When brought owner said he had given several doses of cathartic medicine, salts, castor oil, and pills, and the animal was continually straining and passing a little mucous and blood. The case was diagnosed hastily as one suffering from too much physic; animal was left with me, and was watched carefully. Tenesmus very frequent, and the passing of blood and mucous; the belly tucked up, appetite voracious, thirst normal, nose cold and moist, temperature normal, eyes bright, conjunctiva slightly yellowish. Treatment consisted in the administration of tinct. opii, gtts 4, every two hours, together with a rectal suppository containing a quarter of a grain of morphia, diet limited to raw meat morning and night. This treatment was continued for a week, and, with no improvement in the condition, an examination was made of the rectum, with the forefinger, and nothing could be felt. In making this examination the abdomen was compressed with the other hand and a large hard tumor was felt, extending anteriorly from the pelvis forward. In pressing the tumor back against the pelvis, with the finger in the rectum, no fæces could be felt. This time intestinal obstruction being made out, a glycerine suppository was introduced into the rectum, and in an hour the rectum and lower bowel were filled with an enema of hot soapy water, given with a fountain syringe holding a quart; at the same time massage of the bowels was performed; this was done every hour for eight hours, introducing a glycerine suppository every half hour as far forward as possible. At the ninth injection a mass of fæcal matter was passed, measuring 11 inches long, 6 inches in circumference, and 3½ inches in diameter. Mass consisted of fæcal matter and a great deal of bone, more or less comminuted. The after treatment consisted in daily enemas of hot soapy water and olive oil, and daily exercise, with diet of meat free from bone once a day. The animal improved very rapidly, and a month later and at the present time is as fine a specimen of his breed as is in the city. This case to me was interesting and instructive, and, while the result was happy, it taught me a lesson that I shall never forget—namely, "not to take too much for granted from the history, and from the general appearance of the patient."

[WRITTEN SPECIALLY FOR THE AMERICAN VETERINARY REVIEW.]

DISEASES OF THE HEART AND BLOOD VESSELS.

IV.

THICKENING OF THE COATS OF THE AORTA (ARTERIO-SCLEROSE) CAUSING, AS THE MAIN SYMPTOM, ATTACKS OF STAGGERS.

BY J. A. COUTURE, V. S., QUEBEC.

On March 7, 1893, I was called to attend a draught mare, aged five years, weight 1400 lbs., presenting all the appearances of perfect health. The history of the case was as follows: Until February 15, this mare had been used as a light draughter, working very well, but very hard. That day she had during the journey an attack of staggers, as the owner called it; she fell on the ground, was bled at the palate and recovered her senses after a few moments. The journey was finished without any more trouble.

The next day, February 16th, she was travelling at a good speed when she had another attack of staggers; a few minutes of rest, another blood-letting of the palate, and the mare continued her journey back home. She had to cover three miles to return to the stable; the distance could be travelled at a walk only, as the mare was having new fits of staggers as soon as she was made to trot.

The patient was given a fortnight's rest, during which time nothing remarkable was noticed by the owner. The appetite was good, the fæces normal, the eyes bright, the animal appearing in the best of health.

She then returned to her work, but was found of no use. She could only pull her vehicle, at a walk, for 40 or 50 acres, and would then show a most intense dyspnœa, rapidly followed by asphyxia, fall on the ground with a few convulsions. After a few minutes rest the respirations would become almost normal, the patient would get up, start again at a walk, to have soon another attack. When the mare is unharnessed she can be made to travel a few miles at a walk and gentle trot.

She was then showed to a veterinary surgeon of this city, who examined her, thought the trouble to be heart disease, and sent her to me.

Clinical Examination.—At rest the patient seems in excellent health; the condition is good, appetite good, she lies down every night, she is playful in her box. The pulse, felt at the jaw, is 44 and weak, but weaker at the left than at the right; there is no perceptible difference in the strength of the pulse felt at the temporal arteries. Rectal temperature normal; respiration slightly abdominal, about 18 per minute. The beatings of the heart are strong and audible on a larger surface than in healthy animals (hypertrophy). The first sound is metallic and double, but no bellowing sound (bruit de souffle) or any other abnormal sound can be heard. The respiratory murmur is hardly distinct at rest. At the inferior part of the chest there is a gurgling sound (bruit de liquide); there is also some dry crepitating râles. There is a strong, sonorous, moist cough, as in chronic bronchitis. Slight venous pulse at jugular vein. The result of the clinical examination of the patient at rest is that there is hypertrophy of the heart, bronchitis, some emphysema of the lungs, and want of concordance in the contraction of the two ventricles of the heart; the venous pulse indicates that there may be (or not) an abnormal plenitude of right heart, but I could find nothing indicating a valvular disease.

After 36 hours' rest in the stable the mare was yoked to an empty sleigh, weighing about 150 pounds, special attention being paid that the collar was large enough. She starts at a walk and seems all right; she is then made to trot gently; she went about 300 feet, when the dyspnœa is most intense; she staggers, falls on the ground, has a few convulsions, then becomes quiet and unconscious. She is allowed to rest a few minutes, the respiration gets gradually normal or nearly so, she gets up and she is returned at a walk to the stable. Auscultation reveals the belchings of the heart to be weak; in fact, almost imperceptible; the pulse is weak and of the same nature as above; the respiratory murmur is very strong.

Diagnosis.—What shall be the diagnosis? Proceeding by way of elimination, I can say that it is not a disease of the heart, nor of the lungs, nor of the brain, and I formulate my opinion as being: *A thrombus into either the carotid arteries, or the jugular veins, or the pulmonary arteries or pulmonary veins.*

Prognosis fatal, and owner is advised to have the animal destroyed.

Autopsy.—The autopsy is made immediately after death. Nothing special is noticed into the digestive and urinary organs. All the valves seem normal except the aortic. Heart hypertrophied a little; the semi-lunar valves of the aorta are thickened. When the aorta was laid bare and examined the cause of the symptoms present during life was easily discovered. It gave to the touch the sensation of being filled by a thrombus for a length of about 18 inches, starting from the ventricle. When laid opened the coat was found considerably thickened, reducing the inside diameter of the blood vessel to about one quarter-of what it is normally.

The mare was suffering from *arterio-sclerose of aorta.* The consequences are easily understood: When the animal was at estr the circulation was sufficient and nothing abnormal could be detected. When the animal was exercised the small diameter of the aorta acted as an obstacle to the circulation, the pulmonary vessels became gorged, dyspnœa rapidly became suffocating, and the animal had what was called an attack of *staggers.*

THE VETERINARIAN AND THE HORSE-SHOER.

By J. P. Adams, Glenville P. O., Cleveland, Ohio, President Ohio State Association Master Horse-Shoers, President Cleveland Local No. 5, Second Vice-President National Horse-Shoers' Protective Association.

An Address delivered before the Ohio State Veterinary Medical Association

When I accepted an invitation from your worthy President, Dr. E. H. Shepard, to prepare and read a paper before this honorable body on the subject of the relation of the horse-shoer to the veterinarian from a horse-shoer's standpoint, I did so solely for the purpose of doing what I could to further a good cause, namely, the education of the horse-shoer along a line heretofore almost entirely neglected both by the colleges and the horse-shoers themselves in the study of anatomy, physiology and locomotion, the horse-shoer not being entirely to blame for the condition of the craft, because as the veterinary science pertaining to the preventive as well as the curative, in considering the condition of the horse, did not deal with the matter of horse-shoeing, and the art of shoeing was lost sight of very largely by the veterinary except so far as it came to his knowledge in the actual every-day practice of his profession, and the horse-shoer either did not realize or did not care, but was content to work along in the same old rut as others had done before him, without making the progress that was easily within his reach if he had but made the effort to obtain it. This condition of affairs existed until some of the craft saw the necessity of an advance, and a chance for the betterment of conditions was recognized by some of the more progressive horse-shoers, and found expression at the Horse-shoers' Convention, held in Chicago in 1893, by the appointment of a committee of three veterinary horse-shoers, graduates of regular veterinary colleges, men who had served the time and had learned the horse-shoeing business, and thus were qualified to better understand the needs of the craft, whose duty it was to devise ways for the education of the craft, and call out or create a written expression of the best methods of shoeing the horse, and how well their work has been done is evidenced by the fact that schools of varied character have been established and carried on in a number of our largest cities, and the character of the papers written and published in our official journal, and in a souvenir published by Detroit local No. 3, Master Horse-shoers, containing instructive papers upon many subjects pertaining to horse-shoeing, and also in a souvenir published by local No. 39 of New York City, there are articles of the same class and character upon similar subjects that are indeed creditable and worthy of note. All are of a character that give strong proof of more progressive ability and intelligent study than has heretofore been given to these subjects by the craft or the veterinary profession.

The practice of shoeing the horse dates back to remote ages, and very little progress has been made until comparatively recent times, and it is safe to say that more progress has been made in the last twenty-five years in this country than ever was made in this branch of industry. The fact that the horse-shoer did not progress is surprising on account of the close relationship between the horse-shoer and the veterinarian, the horse-shoer and the horse owner, many times the pleasure and comfort of the horse owner being largely dependent upon the intelligence and skill of his horse-shoer, and it seems to me that in many cases the veterinarian has lent his aid to try to keep the horse-shoer down by calling him incompetent, not always unjustly, but many times to shift the responsibility of incompetency on his own part, for it is a fact that with all the scientific study and intelligence of the veterinary profession the matter of shoeing the horse has been very largely neglected, and there is not a college in this country where a veterinarian or a horse-shoer can take a scientific course in horse-shoeing, which seems to me is not as it should be.

Dr. Robinson, in a paper read before the Illinois State Medical Association, says: "The idea of making a practical and scientific horse-shoer of a veterinary student by a few courses of hammering iron into shapeless masses, as some of our colleges have attempted, is to my mind quite as absurd as the idea that a course of the structure and functions of the foot would make a horse-shoer a qualified veterinarian." It is apparent to the casual observer that the relation of the horse-shoer to the veterinarian must be founded upon justice, and in justice to the horse-shoer it is to his credit that it can be said that he has at last awakened to the real condition which he occupies, and to the necessities of the age, and is ready and willing to prepare himself, and is anxious to place himself upon the plane that is his to occupy, and in order to do this we naturally turn to the only source within our reach for instruction, namely, the veterinary graduates of the regular veterinary colleges, and the "National Horse-shoers Protective Association" instructed our committee to go to the National Veterinary Association, which met in Buffalo, last September, with instructions to place before them the conditions as recognized by the horse-shoers and ask them to aid the horse-shoers of the country by giving systematic lectures upon the subject of anatomy and physiology of the the horse's foot and leg, to which request the association heartily consented. And it is for the same purpose that I appear before you to-day, asking you to consent to lend your aid to the horse-shoers of the State of Ohio by giving lectures upon these subjects before the various horse-shoers' associations of the State when the horse-shoers ask for such service. The result of such lectures and the systematic study of the subject by the horse-shoers cannot be otherwise than beneficial, because when the horse-shoer has become educated and fairly well understands the locomotory machinery of the horse he will then have fortified himself against the charge of incompetency so often justly laid at his door.

The result of the education of the horse-shoer along the line of anatomy and physiology of the horse's foot and leg will make him a competent helper to the veterinary, and will in no way infringe upon the rights or premises of the veterinarian, because with a superior knowledge of the normal conditions of the foot and leg of the horse, he will know and fully understand that he is in no way qualified to treat the pathological condition of the foot and leg.

Dr. Franklin said that one of the most fearful things to contend with was conceited ignorance, and every veterinarian knows that the conceited horse-shoer is a hard customer to deal with. It has been said that the average horse-shoer knows no more about the foot of the horse than he did of a block of wood, and that it was not necessary for him to have an education or be a graduate of even a common high school. Perhaps this may be true in exceptional cases, the charge containing merely truth enough to give argument, and in the past the charge was truer than it is to-day, but the truth is recognized by the National Horse-shoers Protective Association, and to remedy this they have provided for an apprenticeship system, and one of the qualifications is that he shall have at least a common school education, because out of the educated apprentice can be made the intelligent and scientific horse-shoer of the future. Sometimes the horse-shoer has charged the loss of trade to the veterinarian, and this is not always unjustly done.

The veterinarian has reason to complain of the charges of incompetency made by the horse-shoer often entirely without cause and done for fear of losing the customer, which mode of doing business by either party is not calculated to create a friendly feeling or closer relationship between the horse-shoer and veterinarian, but with increased knowledge on the part of the horse-shoer all these conditions will be much changed. When the horse-shoer has come to understand more of the anatomy and physiology and functions of the muscles and tendons of the horse's foot and leg he will be better qualified to study and understand the law of mechanics governing the horse when in rapid action. Each has enough to perfect himself in his own individual field, and when the horse-shoer becomes educated he ceases to be a quack. For quacks certainly exist in the horse-shoeing business as well as in the veterinary. It is a well-known fact, one complained of by the master horse-shoers, who have served a number of years of time to learn their trade, and spent considerable time in the study of the interest of the business to be compelled to meet the unscrupulous quack veterinarian, who will go out of his way to discover some fault in the manner the horse has been shod and use his profession as a veterinarian to persuade the owner to transfer his horse-shoeing to the shop of the veterinary quack. This kind of business is frowned upon by the veterinary profession and by the regular master horse-shoer, whether it be by the veterinary quack or by the horse-shoer quack ; both are detrimental and many owners judge honest, honorable and capable men by their experience with these kind of men. And it is by making it disreputable, and the more disreputable the better, that the business of horse-shoeing and the practice of veterinary surgery and medicine can be made more profitable, more honorable, and much more satisfactory to all concerned.

Many horse-shoers of to-day attempt to practice veterinary surgery, and the fact of their attempting it, with their lack of knowledge of anatomy, proves their incompetency. If success attends his efforts we are of the opinion that it is more luck than good management, when, if he was educated and knew something of the intricate machinery that needed repair, he would fully understand the necessity of the employment of a competent veterinarian, whose province it would be to deal with the case in hand. Many times, and in fact it is common, when a horse has picked up a nail, for the owner or driver to immediately go to the horse-shoer, when the horse-shoer would know nothing at all of the necessities of the case, but would do something to retain the customer, for the false notion often prevails that if he did not do it that the customer would take it as an acknowledgment of ignorance. I have now in mind two instances of this kind, which proved quite expensive to the owner, when by proper treatment by a veterinary, and intelligent care, the result would have been different. The veterinary, in addition to his knowledge of medicine and veterinary surgery, should be able to intelligently pare out, dress properly, and level the horse's foot, and the horse-shoer, in addition to being able to make and properly adjust and put on a shoe, should know more of the machine upon which he works. It certainly is not necessary for the veterinary student to spend three years in the study of horse-shoeing to try to perfect himself so that he would understand the science of shoeing the trotter, or be able to adjust a shoe for the purpose of accomplishing or aiding a remedy where such work is necessary; neither is it necessary for the horse-shoer to spend a great length of time in the study of anatomy and physiology of the horse's foot and leg as far as is necessary and as far as it applies to the art of horse-shoeing. There are different branches of horse-shoeing, some requiring a greater knowledge of the laws governing the effect of the application of the shoe to shoe the heavy draft horse; the anatomy and physiology of the foot alone is often all that would be necessary, but in the shoeing of the trotter and the gentleman's road horse a more extended knowledge is required. Horses who are naturally fast, whose speed is not available because of some peculiar formation causing them to strike themselves, thus very materially depreciating their value, when by mechanical appliances, intelligently applied, such defects may be overcome. In order to make the appliance intelligently it is necessary that the horse-shoer must understand the law of mechanics as applied to the action of the horse, and in order to do this he must know something of the anatomy and physiology of the horse's foot and leg. This knowledge, when intelligently applied, certainly does not interfere with the veterinarian, but in case of injury or a pathological condition resulting from accident or otherwise, he would, it seems to me, be a competent counselor.

We are living in a time of specialists, and the man who attempts to accomplish anything in life, in order to keep in line and abreast with the procession, must focus his energies upon a single line of action. If he attempts to cover too much ground or too large a field he will obtain only a superficial knowledge of each, and he will not excel in any, but to succeed and be judged competent, whether it be in the veterinary practice or as a horse-shoer, he must confine himself to the subject of his own profession, and instead of there being discord or distrust between the veterinarian and the horse-shoer, it seems to me that when the two verge and come together that there will be harmony brought about by a superior knowledge of horse-shoeing on the part of the veterinarian, and of the anatomy and physiology and the laws of locomotion of the horse's foot and legs by the horse-shoer, which will redound to financial gain to the horse-owner and the comfort of the horse. Thanking you for your kind attention, I will leave the subject with you.

SALICYLATE OF SODIUM.

By W. C. Hanawalt, D.V.S., Sheffield, Ill.

A Paper read before the Illinois Veterinary Medical Association.

The subject to which I wish to call your attention for a brief space of time is not a new one, nor one unfamiliar to you, but, on the contrary, it is an old topic, discussed by M.D.'s until they are, I presume, tired of it. To fortify myself in the last statement, I will quote the remark of an able M.D. to myself a few weeks since. It is as follows: "Salicylate of sodium is no good; it deranges the stomach, upsets the digestive organs, and caps the climax by irritating the kidneys." After making the above statement he wrote me a prescription for acute rheumatism, and, to my great surprise, after such a remark, entered salicylate of sodium at the head of the list. In explanation he admitted that if properly used it is all right, and right here is where I agree with him. If judiciously employed, there is no bad after effects in the use of salicylate of sodium, so far as I have been able to ascertain. But for a prompt, speedy remedy, in its line of therapeutics, I find no better agent.

It is the therapeutics of salicylate of sodium to which I wish to call your attention to-day; not that which is laid down in our text-books, but additions thereto, as I have applied them in my own practice, and to make my paper plain and easily understood I will cite cases and apply the therapeutics to each:

Case I.—On May 28, 1892, I was called to see a black stallion roadster, five years old. Inspection revealed a discharge at the nose resembling coagulated buttermilk, weeping of the eyes; weak, rapid pulse and a temperature of 103° F. I prescribed

℞ Belladonna, fl. ext., ℥ ss.
Veratri viridis, fl. ext., ℥ i.
Aquæ, q s., ad. Oss.
M. Sig. ℥ i every 4 hours.

In connection therewith I prescribed two drams sulphate quinine to be given every 6 hours. May 29th, found my patient worse, with a temperature of 104° F., pulse somewhat stronger, appetite greatly impaired. I now prescribed stimulants and diuretics and continued the quinine as before. May 30, temperature 105° F., appetite gone, hurried respirations and great languor. I now realized I had a desperate case, with a rapid decomposition of the blood, and with such a point in view prescribed salicylate of sodium, one dram, every three hours, dissolved in water, and continued the remedies of the day before. May 31st, found great improvement. Pulse much stronger and slower, temperature down to 103° F., the animal partaking of a little food, and paid more attention to his surroundings. From this time on there was a rapid recovery. The salicylate was continued for three days.

Case II.—Was called to see a bay gelding, seven years old, weighing about 1200 pounds; he was lying in his stall, with legs and feet protruded, and groaning as if in great distress, but making no struggles. Told the owner to drive the beast to his feet, which he did after much persuasion, but the animal immediately lay down again. While getting up he appeared as if in great pain, which seemed to be located in the feet, and was very stiff. Hoofs were very hot and a light tap upon them made the horse wince with pain. On inquiry found the animal had been running in a pasture with hogs which were being fed for market. Had been in said pasture for about six weeks eating all the corn he wished and whenever he wished, being disturbed only at such times as he was wanted to be driven about six miles to town for the farmer's mail. *Diagnosis.*—Engorgement, with acute laminitis accompanying. *Treatment.*—Soccotrine aloes, one ounce, given at one dose as a bolus, followed by salicylate of sodium, one dram, every three hours for three days. This animal went to work the fifth day as one of a team to pick corn, and has been all right ever since, with no stiffness, nor bad feet.

Cases III. and IV.—Was called to the farm of Mr. H., who was at the time in Iowa. His boys, aged about 14 and 16 respectively, had on the Saturday preceding my visit picked a load of corn for feeding their hogs over Sunday and left it standing in the hog yard, then turned the horses in a pasture adjoining. On getting up Sunday morning the boys went out to find both horses in the hog yard, filled with corn, standing to one side, apparently satisfied with a big meal. As the horses did not appear sick the boys turned them back into the pasture, thinking, they said, that it would be all right. Monday they noticed the horses were languid, but still trusted all would be well. Tuesday they noticed the animals laying around at different places in the pasture, but supposed they were just lazy, thinking that the danger point had surely passed, and at night stabled them for use the next day. But, lo! on Wednesday morning they found both horses unable to rise and in great pain. This was the signal for calling aid, and when I called found both animals as above described and with the aforesaid history. *Diagnosis.*—Engorgement with laminitis accompanying. *Treatment.*—Eserine, gr. i, injected per trachea; cold bandages to the feet and salicylate of sodium, one dram every three hours. Both these horses were upon their feet by noon, when they were stood in mud the greater part of the afternoon and for an hour or two each day for several days. One of these horses was put to work the next week and has remained all right ever since, the other one, a heavier animal, is tender-footed and always will be, I presume, as his hoofs are very brittle, and split and break easily, although with careful shoeing he is doing good service.

Case V.—A bay steer being fed for market would walk about with head erected high in the air and nose protruded. Continued in this manner for three days, when the owner found him with head down to the ground, with nose still protruded, and seemingly unable to raise his head or partake of food. At this time, October 23d last, I was called and found the animal in the last above-described position. In addition found discharges from nose and eyes and a stiff gait. This animal was very ugly about being handled, therefore I neglected taking pulse and temperature. *Diagnosis.*—Ox distemper, with complication of neuralgia of neck and head. *Treatment.*—Kalium nitrate and fl. ex. belladonna, every four hours, alternated with salicylate of sodium every four hours. This case improved almost from the beginning of treatment, and is now feeding nicely.

These cases, I think, will suffice to show the mode of therapeutics in the use of salicylate of sodium as applied by myself. I use this agent in all cases of sudden or acute stiffening, laminitis, stubborn miasmatic fevers, acute lameness from hard drives, and in horses having had an overdrive, making them sore and stiff the next or following days, it is almost a specific.

EUROPEAN CHRONICLES.

Arytenectomy.—The value of this operation is, properly speaking, still in doubt in the minds of many veterinarians, and, while many good authorities are in favor of it, a great many consider it as not yet deserving the efficacy that is claimed by the former. And, while it has not found, even in its birthplace, the adoption that the authority of Professor Möller ought to have given to it—or in England, where Fleming first advocated it—it has found in Professor Cadiot, of Alfort, a strong advocate and a great admirer. But he has also met with *confrères* who deny the operation its advantages and almost its indication. Professor Moussec, of the same school, is among them. At a late meeting of the Société Centrale in Paris, Cadiot took an opportunity to defend his claim, and in a very strong argument presented before his brother-members a concise record of the cases upon which he has operated. Twenty cases of roaring were operated on by him, and of these he has been able to follow: Seven radical recoveries, two temporary improvements, the balance unsuccessful, making a pretty good percentage—nearly fifty per cent. of successful cases. The operation which he prefers is the removal of the arytenoid cartilage and the corresponding vocal cord. He claims that a great deal of the result depends on the manipulations of the surgeon and the mode of cicatrization. If we have well understood his remarks, he has never met with any accidents or fatal complications that are attributed to the operation. The name and reputation of Professor Cadiot, and the written evidences that he presented to that meeting, with the oral statements made by some for whom he has operated, will do much towards the value of the operation. The results that have been obtained by veterinarians in the United States, and specially by Professor Harger, who has published many cases of his own, will receive a certain amount of confirmation by those so well presented by our French collaborator. We take pleasure in recording them, and hope that our friends in America may also contribute towards the history of an operation which seems to have already rendered so much service. Of course, arytenectomy will not always be followed by success ; there is no surgical operation which can be considered as being positive in its result ; but, when it is considered that good animals, well made for work, were from a worthless condition returned to their owner, and for years have been able to render valuable services, it speaks for itself.

Agave Americana.—Though of an excessive modesty, Mr. Decroix, a pensioned army veterinarian, has to his professional credit many valuable titles for works related to his profession ; and, if it was nothing else but the paternity that belongs to him of the use of horseflesh for food on the continent, it would be enough. But, notwithstanding his 78 years of age, Mr. Decroix is still a hard worker and a great investigator. I saw him a few days ago : he was carrying on both of his arms the marks of severe counter-irritation ; the right was swollen, the seat of an extensive redness, as from the severe application of a mustard poultice, kept on for a long while ; the left arm was not so severely affected. These effects were the result of an experiment which he had tried upon himself to test the properties of a plant, the *Agave Americana* (vulgarly but improperly called aloes), which he had seen used by the natives during his campaigns in Africa. He went further, and tried to find what effects the same plant would have if taken internally; he took one, he took two doses of the pulp of the *Agave Americana;* but, he regretted to say, without any effects. I do not know that I am mistaken; I believe in enthusiasm, and can understand how one may sometimes do what others will hesitate to, and do it indifferently of any self result—but for the good of all,—but when I saw the two arms of this good old gentleman, when I heard him relating the experiment on himself, and when I considered his age, I could not but feel great respect and admiration for him, and thought that he would receive from those he was addressing at least a word of thanks. He did not; he did not expect it, and seemed to be satisfied to have presented his colleagues with a new remedy, a new counter-irritant, which may be advantageously applied in countries where the plant grows—of course, it is in warm climates, and veterinarians who in these districts, whether as army or private practitioners, may have opportunity to use it, may one day thank Mr. Decroix for his discovery.

X-RAYS.—I was shown to-day a number of plates obtained by this process. The ordinary usual human hand, specimen from a rachitic pig, a horse's knee, a horse's foot, and one plate showing the uterus of a guinea-pig, containing two fœtuses, well developed, and in which the positions and presentations of both could be readily exhibited. I am promised a more practical exhibition in a few days, and you can be assured you will get the details of it. Those that I have seen and those that I am promised are from the Alfort School. London first, Alfort next; where are our American colleges? A. L.

PARIS, FRANCE, June 15, 1897.

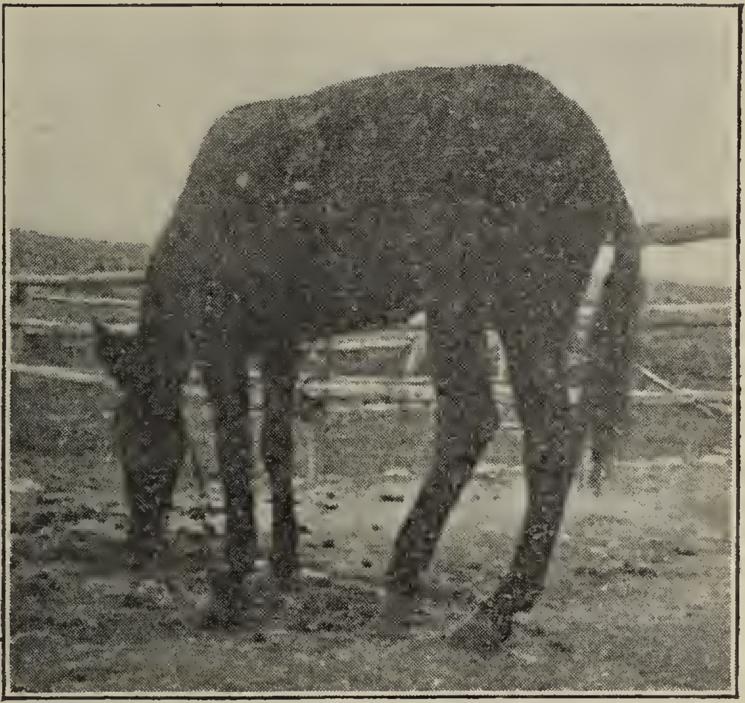
REPORTS OF CASES.

LUXATION OF THE FEMUR.

By WM. V. LUSK, Veterinary Surgeon, Second U. S. Cavalry.

This is not a mysterious case, but an interesting one, on account of its rare occurrence.

The subject was a mare mule, 19 years of age, used as a pack animal in the United States Army. She was heavily packed with grain one morning and started out with a surveying party on a trip across the country. After going about 20 miles she ran into an alkali mire, which are very numerous in this country, and immediately sank in up to the belly. Her load was removed, and, after much struggling, she finally managed to drag herself out. It was then discovered that she was unable to walk or bear any weight on the left hind leg. The officer in command of the party, not knowing the nature of the trouble, ordered her turned over to a ranchman near by for safe keeping, thinking that on their return trip she would be all right again and able to be brought back to the fort. Thirty-five days later the party returned and found the mule still very lame, but able to hobble along. She was driven into the fort in this condition and turned over to me for treatment. She presented the following symptoms: Limb shortened and fixed in a position of adduction. While standing the affected limb hung directly across and in front of the opposite one; upper trochanter very prominent; skin over hip joint very tense. The mobility of the limb was very limited, especially in the forward direction.



A diagnosis of dislocation of the hip joint was made. The prognosis, of course, was unfavorable, and as the animal was perfectly useless I recommended that she be killed, which was done. Post-mortem examination revealed a supra-luxation of the hip joint. The head of the femur had been forced out of its socket and was lying about four inches above the cup of the joint, where it had formed a false articulation among the muscles of the hip. The original joint cavity was completely filled with a quantity of tough, white, fibrous tissue. The accompanying photo shows the position of the limb while standing.

If you cannot go to Nashville, do the next best thing: subscribe for the Review.

LIPOMA CAUSING DEATH.*

By J. F. ROUB, D.V.S., Monroe, Wis.

The patient was a dark brown gelding, sixteen hands high, nineteen years of age, weighing 1200 lbs., and used for a carriage horse. Never known to refuse his food and never saw a sick day previous to the time I was called to see him. Upon examination, I found the pulse almost imperceptible, temperature 103° F.; perspiration bedewed the cutaneous surface; visible mucous membranes somewhat injected; peristalsis normal and the fæces were normal in appearance. The horse was suffering excruciating pain. The pain was continuous and presented the characteristic symptoms of enteritis, and I informed the owner that his horse would probably die. It being only a short distance from my hospital, I had the animal taken there. This was at 8 A. M. I began treatment by giving opiates and anodynes in large doses, but all to no avail. The horse continued to roll and thresh about until he was nearly exhausted. At 1.30 P. M. I gave morphine sulph., gr. v., hypodermically. At this time I informed the owner that I was mistaken in my diagnosis, as it would be impossible for the horse to have enteritis and peristalsis continue for five hours and a half. I then made a rectal examination, but discovered nothing that would lead to a true diagnosis. Being at a loss as to the cause, I waited for further developments. At 2 P. M. the horse grew quieter and seemed almost free from pain. At 3 P. M. he rolled a few times and then lay in a recumbent position partly comatose for about four hours. At 8 P. M., pulse imperceptible, a cold sweat bedewed the body, extremities cold, haggard expression of the countenance, tremor of pectoral muscles, and staggering gait, temperature 98° F., intestines paralyzed. At this point I was sure I had a case of enteritis, but did not inform the owner. There was not much change in the symptoms until 8 A. M., when the patient grew much worse, and died at 9 A. M.

The animal was taken out two and one-half miles and the autopsy revealed a lipomatous tumor, resembling a large apple, measuring four and a half inches in diameter; the pedicle was three-eghth s of an inch in diameter, being attached to the posterior aorita, three inches posterior to the lesser mesenteric artery, causing pressure on the aorta sufficient to diminish the calibre of the aorta three-fourths. This caused infiltration, and there was a black gelatinous mass, varying from one-half to one inch in thickness, and covering a surface of 12 to 15 inches, also extending down the lesser mesentery about eight inches. The intestinal tract and all the other internal organs were in a healthy condition.

---

* Read before the Wisconsin Association of Veterinary Graduates.

SUPERNUMERARY TESTICLES.

By H. H. Newcomb, D.V.S., Derby, Conn.

The best authors seem to doubt the existence of supernumerary testicles, and consider mistaken diagnosis responsible for the reports of such cases; but so confident am I of a correct diagnosis in this instance that I have no hesitancy in reporting it.

On June 16th, 1895, I was called to castrate a well-bred two-year-old. On examination no sign of scrotal hernia was discovered, but quite a difference in the size of the testicles was noticeable; the left being about one and one-half times the size of the right.

The colt was cast and the right testicle removed first. On incision of the left side of the scrotum was surprised to find the testicle exposed no larger than the first. With a little traction the difference in size was made apparent. The spermatic cord divided and on the branch was a third testicle. This did not differ from the other except in size. It possessed an epididymus and as far as the naked eye could discern, had the same structure. The ecraseur chain was passed over the cord above the division and both testicles removed. The colt was left in the pasture and made a good recovery.

In May of 1896 received a letter from the owner asking me to examine the same colt. Dr. E. H. Morris and myself examined the animal and found the right side of the scrotum enlarged and containing what we had no doubt was a testicle, although it seemed firmly adherent to the walls of the scrotum. On May 19 we operated and removed another testicle. The coverings were inseparable and it was necessary to dissect the testicle away from the scrotum. The cord was thickened and very tough and after breaking an ecraseur chain the emasculator was used to sever it. No evil effects followed the operation.

RUPTURE OF THE FLEXOR METATARSI.

By Wm. V. Lusk, Veterinary Surgeon, Second U. S. Cavalry.

I was called to the stables one afternoon to see a horse supposed to be suffering with a broken leg. He had been kicking at another horse, and the supposition was that he had been kicked. He stood perfectly normal when I first saw him, but in attempting to move he used the leg, but knuckled over so far that he walked on the wall of his toe. The leg appeared perfectly loose at the hock, and the gastrocnemius was loose and flabby. I diagnosed rupture of the flexor metatarsi and ordered the animal placed in a box-stall, to be kept there for four weeks. At the expiration of the four weeks he was led out for examination. He limped slightly, but in the course of another week the lameness entirely disappeared and he was pronounced cured.

A FŒTAL MONSTROSITY.

By R. Kerr, V. S., South Kaukauna, Wis.

On May 31, 1897, I was called to the farm of Michael Welsh, in the town of Kaukauna, for the purpose of returning the "everted uterus" of a cow. On making an examination, I found that it was a case of parturition, in the posterior presentation, lumbo-sacral position. The fœtus described below was delivered, alive and fully developed. The lumbar and sacral vertebræ were turned upwards and forwards over the dorsal region; the false ribs were turned outwards and upwards; lungs, heart, and diaphragm normal; abdomen from posterior extremity of the sternum to the coccygeal vertebræ was laid wide open, and the intestines of the fœtus were floating in the maternal uterus. The dam was a very valuable animal, and made a good recovery.

THE TUBERCULIN TEST IN MASSACHUSETTS.

A group of 130 cows in Lowell and vicinity were condemned by the Massachusetts State Board of Cattle Commissioners as being affected with tuberculosis under the test by tuberculin, and Senator Putnam, of Lowell, was induced to secure an investigating committee from the legislature to ascertain if the animals were really diseased, through the services of experts, who were to superintend the destruction of the animals and the accompanying autopsies. Later the same committee was authorized to purchase and destroy twenty animals from the Lowell herds which were tested with the 130 cows without reacting to tuberculin, the purpose being to ascertain if the diagnostic had proven accurate in detecting the disease.

Two reports were submitted to the legislature—a majority and a minority report, together with the special reports of the five experts appointed, who were Drs. H. C. Ernst, of Boston;

Theobald Smith, of Boston; George N. Kinnell, of Pittsfield; Charles R. Wood, of Lowell, and Frank S. Billings, of Grafton.

We publish herewith two reports, and in the next issue of the REVIEW will give the details of the reports of the experts, which will be found very interesting reading to those who have been making a study of this very important subject.

MAJORITY REPORT.

BOSTON, MASS., May 25, 1897.

Honorable Senate and House of Representatives of the General Court of Massachusetts.

The joint special committee of the legislature appointed to investigate and report upon the post-mortem examinations of certain cows of Lowell and Dracut condemned as tuberculous under the order of the Board of Cattle Commissioners, beg leave to submit the following report:

Under the authority of the order adopted by the legislature on April 9, the committee selected as experts to assist in the examination of these animals, Dr. H. C. Ernst, of Boston; Dr. Theobald Smith, of Boston; Dr. George N. Kinnell, of Pittsfield; Dr. Charles R. Wood, of Lowell; Dr. Frank S. Billings, of Grafton.

Your committee and these experts were present at the slaughter of 130 of the animals condemned as tuberculous from the Lowell and Dracut herds. All but 1 of these animals had reacted to the tuberculin test. Cow No. 10 was killed after condemnation upon physical examination. Of the 129 animals all but 3 were tuberculous, although a large proportion of this number were so slightly affected as to warrant the use of their meat for food if slaughtered and dressed under proper supervision.

After the examination of the condemned animals, the committee, acting under further authority of the legislature in accordance with the Resolve passed May —, secured and caused to be slaughtered all but 3 of the animals from the four herds from which the first lot of 90 condemned animals were taken and which had successsfully passed the tuberculin test. As will be seen by the report of the experts, of these 20 cows, 6 were found to be tuberculous by all of the experts and 7 by two of the experts.

Your committee desires to call particular attention to the fact that none of the 150 animals examined had tuberculosis of the udder, although the disease was found in two cases in the lymphatic gland closely connected with the udder. If these 2 cows are a fair average of the milch cows of Massachusetts, tuberculosis of the udder is not as prevalent as is sometimes feared.

It was apparent to your committee from their observations at the investigation, that a reaction from the tuberculin test in no way indicates the extent to which the animals may be tuberculous. This fact can only be determined upon post-mortem examination.

It seems to us, then, that the testing of herds with tuberculin as has been done in the past, and the slaughter of reacting animals, does not offer an absolute guarantee to the farmer or owner that the remainder of his cattle are free from tuberculosis or that they may not be infected within a comparatively short time, even though he replaces the condemned animals by those which are tested and alleged to be healthy.

We also wish to call attention to the necessity of thoroughly cleansing and disinfecting the buildings in which condemned animals have been kept, and this should be done at the earliest opportunity under the order or supervision of the Board of Cattle Commissioners or their agents, and before new animals are placed therein.

From our observations at the investigation, we hold that the Board of Cattle Commissioners should at once take into consideration modifications of the law relative to the condemnation of cattle by tuberculin test alone, that is, upon the request of owners of cattle for such testing of their herds. If cattle are to be condemned or regarded as suspicious animals only after they show signs of disease, it is a question as to the propriety or equity of the state paying full value for those that are actually diseased. This proposition we respectfully refer to the consideration of the next General Court, trusting that the Board of Cattle Commissioners will, in the meantime, consider the same question and offer recommendations in their annual report.

We believe that the legislature should at once deal with the matter of indiscriminate tuberculin tests. We recommend that all testing of cattle with tuberculin when compensation is expected be limited to the Cattle Commissioners or their authorized agents. The Board of Cattle Commissioners have already expended more than $160,000 of the total appropriation of $250,000 made earlier in the session. If they are compelled to kill all reacting animals and allow full compensation for the diseased cattle the remainder of the appropriation will soon be exhausted. There will then be no money for the prosecution of the regular work of the commission or the slaughter of those animals reported by the local inspectors as suspicious cases and which are really the most dangerous animals to the health and comfort of the general public. The commissioners are not allowed to exceed their appropriation, hence all their work must stop when their money gives out.

We earnestly recommend the immediate passage of the following act:—

SECTION 1. No person or persons having animals tested with tuberculin shall be entitled to compensation from the State for any animals that react to the tuberculin test unless such testing be done by the State Board of Cattle Commissioners or their authorized agents acting as such at the time of the test, and such testing must be subject to the supervision and control of the State Board of Cattle Commissioners.

SEC. 2. This act shall take effect upon its passage.

We submit with this report the reports made by the experts attending the post-mortem examinations of these cattle.

Respectfully submitted,

HARDING R. BARBER, GEO. E. PUTNAM, JOHN J. PREVAUX, *Of the Senate.*

JAMES LAWRENCE, JOHN E. MCCLELLAND, JOHN J. GARDNER, EDWARD A. STEVENS, JOHN B. DEWING, EDWARD A. COWEE, *Of the House.*

MINORITY REPORT.

The undersigned members of the committee dissent and submit the following minority report:—

BOSTON, May 27, 1897.

To the Honorable Senate and House of Representatives of the General Court.

We, the undersigned members of the joint committee of the legislature, appointed under the following joint order and resolve,—

"*Ordered*, That a joint special committee, to consist of three members of the Senate and such as the House may join, be appointed to investigate and report whether or not certain cows owned by residents of Dracut and Lowell and which have been recently condemned and slaughtered as tuberculous, are or are not actually tuberculous; and said committee is hereby authorized to employ experts to aid them in making the investigation hereby ordered."

"*Resolved*, That the joint special committee authorized to investigate certain cattle belonging to farmers of Dracut and Lowell, which had been condemned as tuberculous by the tuberculin test, and to have said animals subjected to an examination by experts, selected by said committee, are further authorized to purchase, slaughter and have examined by the same experts the remaining twenty-three animals of said herds reported not to have reacted to the tuberculin test in order to show the value of that test in as full a degree as possible"—

respectfully dissent from the report of the majority committee heretofore made, and beg leave to submit the following report and reasons for our dissent:—

The report submitted by the various experts employed by the committee to make post-mortem examinations of the animals that were condemned as tuberculous and destroyed, as well as those killed under the above resolve as having passed the tuberculin test, shows as follows:

Number of animals condemned as tuberculous and slaughtered in the presence of your committee	130
Condemned on tuberculin test	128
Condemned on physical examination	2
Found diseased, condemned on tuberculin test	126
Diseased, not found on post-mortem	2
[These two both showed suspicious symptoms and are being made the subject of microscopical examination, which is not yet completed and as to which no report has been made.]	
Found tuberculous on physical examination	None
Free from disease	2

If the two cases which are being microscopically examined are free from disease, then the tuberculin test condemned as diseased two sound animals out of one hundred and twenty-eight, or 1.56 per cent. of error. Errors of physical examination, 100 per cent. In addition to the above one hundred and thirty animals, twelve of the animals embraced in the order were slaughtered, not in the presence of the committee, by mistake, and post-mortems performed by the agent of the Board of Cattle Commissioners in charge of the work, Mr. P. M. Harwood, who reported, without knowing at the time that they were animals embraced in this order, that they were all tuberculous. If these were included, it would show—

Condemned by tuberculin test	140
Found diseased	138
Doubtful	2
Percentage of error (if any)	1.43%

thus showing the marvelous accuracy of the tuberculin test.

As to the extent of the disease found, it varied widely, and we agree with the majority report that the extent of the disease can only be determined upon post-mortem examination, and that no indication of this extent can be found either by the tuberculin test or by physical examination, or any other known means. In many cases the animals which appeared upon physical examination to be in the best condition and which, therefore, in the absence of the tuberculin test would be passed as sound animals, proved upon post-mortem to be the most diseased. It is, therefore, apparent that as a public health measure animals which are condemned as tuberculous by tuberculin test must be killed; as whatever may be said as to the danger from slightly infected cases, this fact cannot be determined until after post-mortem examination. We, therefore, are of the opinion, in view of the evidence, that if the State is seeking to remove tuberculous cattle, tuberculin must be relied on to determine its presence. We are of the opinion that as a general proposition, at least, the sale of beef from such animals should not be permitted, certainly not unless it is sold as such under stringent State regulation, which we do not believe should be permitted, either upon theoretical or upon practical grounds.

As to the animals slaughtered under the resolve, which had not reacted to the test, the report shows that 20 cows were slaughtered and post-mortem examinations performed. Of these, 6 were found to be very slightly infected upon post-mortem examination; and out of these 6, 4 might have contracted the disease since the test was made (see the Report of Dr. Harold C. Ernst). Of the other 2, one was marked as suspicious and held for retest. Assuming them all to be errors, it shows of the remaining animals not pronounced tuberculous by the test 30 per cent. of mistakes.

We regard the results of these post-mortem examinations as of practically no value as determining the question of the value of the tuberculin test, for the following reasons:—

The tests were made more than five weeks prior to the post-mortem examination. During this time, they remained in the infected barns, no sanitary precautions having been taken in the meantime; and as bearing upon this we quote the following passage in the majority report:—

> "We also wish to call attention to the necessity of thoroughly cleansing and disinfecting the buildings in which condemned animals have been kept, and this should be done at the earliest opportunity."

Before the last 20 animals were slaughtered, we requested that these animals be retested for the purpose of determining the presence of disease by the tuberculin test *at the time of the slaughter*, but this was not done. In this connection we quote the following statement in the report of Dr. Ernst:—

> "It is unfortunate that they were not all retested just before the slaughter; for it is quite open to question whether in some of them the infection did not occur after the first injection of tuberculin. In none of them was there any extensive infection."

We particularly dissent from that portion of the report bearing upon the question of tests made by private veterinarians, for the following reasons:—

First. The subject-matter of this portion of the report, together with the act submitted therewith, is not germane to the joint order or resolve under which your committee was authorized to act.

Second. The tests made in this case were made by private veterinarians; and so far as the condemnation based upon those tests is concerned, which is the matter involved in this portion of the report, they are shown to be remarkably accurate.

Third. Tests made in this way are at the expense of the owner, thereby saving considerable sums to the State Treasury.

Fourth. Under the present law there is no authority to condemn and destroy animals affected with a contagious disease, other than section 10 of chapter 496 of the Acts of the year 1895, which provides as follows :—

> "When the Board of Cattle Commissioners or any of its members, by an examination of a case of contagious disease among domestic animals, *becomes satisfied that the public good requires it*, such Board or Commissioner . . . shall cause it or them to be killed," etc.

The Board of Cattle Commissioners are not justified in destroying animals so reported to be tuberculous unless in their opinion the veterinarian performing the test is so far reliable that they are willing to accept his report upon their own responsibility. If the Board has acted otherwise, the fault is with them and not with the law, and the responsibility in such case should rest upon the Board.

Fifth. Assuming the veterinarian performing the test to be competent, and assuming, as we do, that the law looks to the eradication of tuberculosis, there is no more reason why animals condemned by a competent private veterinarian whose test the Board is willing to accept should not be destroyed and paid for than that an animal examined by a member of the Board, or as it practically universally happens, by a veterinarian appointed by them, should be so destroyed and paid for.

Sixth. Because substantially all of the work performed by private veterinarians in this way is upon entire herds, thereby purifying local centres of the disease; whereas the majority of the work performed by the Board of Cattle Commissioners is under the examination by local inspectors and is on isolated animals picked out by physical examination, which is acknowledged to be totally unreliable, leaving the herd substantially as infected as before.

Seventh. Because the act as drawn, *if it accomplishes the purpose* which the majority desire, will result in enabling the Board to destroy without compensation animals found to be tuberculous, where the owner, with a meritorious desire to eradicate the disease from his herd, paid the expense of the examination ; while his neighbor, whose work was performed and paid for by the State, receives an adequate return, thereby punishing the owners of cattle for themselves seeking out and removing this source of danger to the public health, and at the same time offering a premium upon the sale of meat and milk from diseased animals.

As to that portion of the report of the majority which states,—

> "If cattle are to be condemned or regarded as suspicious animals only after they show signs of disease, it is a question as to the propriety or equity of the State paying full value for those which are actually diseased"—

we would respectfully submit that if this means, as we infer it does, that in the opinion of the majority an excessive value is being paid for animals condemned as tuberculous, this is a question for the Board of Cattle Commissioners to settle, and not for a change of law. There is no authority in the present law for paying for tuberculous animals anything more than "the full value thereof at the time of condemnation"; this law having been drawn as a substitute for a section in an act submitted to His Excellency the Governor and by him referred to the Attorney-General, and pronounced unconstitutional, which provided that "the full sound value" should be paid. If an excessive value is being paid by the State the Commission have power to remedy this under the present law.

In conclusion, we would respectfully submit:—

First. That the tuberculin test condemned animals as tuberculous with remarkable accuracy, there being at most only 1.56 per cent. of mistakes.

Second. That the post-mortem examination of animals which were not condemned on the tuberculin test is of no value, because of the lapse of time and lack of sanitary precautions.

Third. That in all cases where entire herds are tested it should be followed by sanitary steps and subsequent re-tests.

Fourth. As a public health measure, animals shown by tuberculin or other proper tests to be affected with tuberculosis should be killed; since the extent cannot be determined by any known means except upon post-mortem examination.

Fifth. That whether the State will permit the use of any portion of such beef for meat is a question of State policy not before the committee.

Sixth. That any change in the law relating to tests by private veterinarians is unncessary and inexpedient.

Seventh. That the question as to the law of compensation is at present a question of administration and not a question of legislation.

Respectfully submitted,

G. H. Kelton,
Wm. H. Porter.

BIBLIOGRAPHY.

Pathologie Interne des Animaux Domestiques—(Internal Pathology of Domestic Animals). Vol. V. By C. Cadeac, Professor at the Veterinary School of Lyon

The house of J. B. Bailliere & Sons, of rue Hautefeuille, Paris, has issued the thirteenth volume of the "Encyclopedie Veterinaire." This volume is the fifth of those reserved for the study of internal diseases. It forms a book of 506 pages and contains 57 illustrations. It is divided into six parts, viz.: *Diseases of the Lungs*, including chronic pneumonias, non-specific tuberculosis, pulmonary atelectasis, pulmonary emphysema, tumors. *Diseases of the Pleuræ*, with the pleurisies (sero-fibrinous, purulent, dry), hydrothorax, pneumothorax, tumors, parasites. *Diseases of the Pericardium*, viz., the pericarditis (sero-fibrinous, traumatic), cardiac lymphysis, hydropericardium, its rupture, tumors. *Diseases of the Heart*, including myocarditis, hypertrophies, cardiac dilatation, degenerations, rupture, anomalies, tumors, parasites. *Diseases of the Endocardium*, with the endocarditis, valvular diseases. *Diseases of Arteries*, with arteritis, aneurisms, thrombosis, vascular ruptures.

By this enumeration one can judge of the amount of the contents of this book, whereas in the preceeding the author continues to review the manifestations of the diseases and their courses in each domestic species. Each subject is treated with close attention, but the chapters related to the chronic pneumonias, pleurisies and pericarditis deserve special mention. The plates that illustrate the various lesions are good and well made.

The regularity and the continued careful attention with which the entire series is being issued justify for both the author and the editors the thanks of the veterinarians who have subscribed to the "Encyclopedie Veterinaire."

Bureau of Animal Industry, Twelfth and Thirteenth Annual Reports for Years 1895 and 1896. Washington, D. C.: Department of Agriculture, D. E. Salmon, D.V.M., Chief of Bureau.

We have received the above report, and find that it is replete with interesting statistics compiled by the officials of the Bureau, and many valuable articles upon important subjects by well-known investigators. Among the contents, aside from the general transactions of the Bureau for the above years, are the following: Contagious diseases of animals in Great Britain, live-stock shipments from Canada, Argentina, and Australia to England, Texas fever in Australia, the curing of meats, dipping cattle for the destruction of ticks; investigations of diseases of domesticated animals, by Theobald Smith; infectious leukæmia in fowls, by Veranus A. Moore; tuberculosis in swine, by V. A. Moore and C. F. Dawson; outbreak of a non-specific disease among swine, by V. A. Moore; "leeches," by Pierre A. Fish; investigations concerning the number and nature of bacteria in milk, by V. A. Moore; a report on rabies in Washington, D. C., by V. A. Moore and Pierre A. Fish; the detection of tuberculosis in cattle, by Cooper Curtice; creameries or butter factories, by Henry E. Alvord; ergotism in Kansas, by W. N. D. Bird; Texas fever in Kansas, by W. E. Hill; an outbreak of cattle disease in Kansas, by W. S. Devoe; the communication of hog cholera by carrion crows, by T. S. Ford; laws of states and territories for the control of contagious animal diseases.

The report is beautifully illustrated by thirty-eight plates, many of which are in colors, and by numerous charts and figures. It is a most valuable contribution to veterinary literature, and reflects much credit upon the Bureau, whose works are always of great value and assistance to the study of animal diseases in this country.

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By W. V. Bieser, D.V.S., New York City.

Contribution to the Treatment of Tetanus by Tetanus Antitoxin [*Röder*].—Tetanus antitoxin to-day furnishes a bone of contention in the treatment of this disease. Sometimes it is reported to work marvellously well, other times absolutely contrary reports fill the veterinary journals. Since the last three days I had two opportunities of utilizing the antitoxin. On the evening of March 25, 1897, a horse that had only been sick 24 hours with symptoms of tetanus was injected, per jugular vein, with tetanus antitoxin. The illness was not favorably influenced. I was called in next day (March 26), but could do nothing to stave off the death of the animal, death ensuing at 5.30 P. M. that day. Three weeks previously the tail had been amputated; in the pus at the site of amputation, bacteriological examination next day showed the presence of the tetanus bacilli. On March 27, 1897, I was called in to see a very valuable animal, which had been declared to be suffering from tetanus that very morning by the local veterinarian. I sent a special messenger after a flask of tetanus antitoxin from the pharmacy of the Dresden High School. Upon the label stood "Government Control No. 4, Officially Tested, Feb. 18, 1897." The patient, a four-year-old, well-nourished, full-blooded, dark brown Hanoverian mare, presented the following symptoms: the rigidity of the head, the rigid pointing of the ears upward and forward, the trismus, the dilated nostrils, the onset of twitchings and convulsions upon the least excitement confirmed the diagnosis. The closely amputated tail was stiffly carried a little to the left; the hind quarters were widely separated and posteriorly placed; pulse was 52 and respirations 38 to the minute; rectal temperature was 38.3° C. Muscular rigidity of the head and neck marked, that of the back and loins less so. Inquiry showed that the patient's tail had been amputated five weeks before. No other wounds were observable, nor was the horse in anything but a healthy condition before amputation. On March 26th the animal was driven in the presence of an officer for some time along various pathways, and on the evening of that day the first symptoms of tetanus set in. Examining the wound occasioned by the amputation of more than one-half of the tail, a yellowish red pus issued from beneath the protecting crustation. The grave condition of the animal did not admit of further amputation; hence the granulating surface was removed by the sharp curette and the whole tail, especially the wounded surface, thoroughly disinfected with a 1 per cent. sublimate solution. The wounded surface, after parenchymatous hæmorrhages had been checked, had been dusted over with the potent bactericide, actol (credi). As the antitoxin would only arrive by nightfall the patient was left undisturbed in a darkened stall, whereupon it carefully lay down, and, according to the stablemen, remained quietly in that position for two hours that morning. But on my entering the stall to inject the antitoxin, it sprang to its feet. The antitoxin, according to directions, was dissolved in sterilized water, and at the same time it was carefully noted that the water bath in which the sterilized water was warmed did not go beyond 39.5° C. The previously disinfected syringe and canula were again thoroughly sterilized before the injection. The hair over the right jugular was lathered, razed off, and the locality rendered aseptic by washing and scrubbing it for three minutes with a 1 per cent. sublimate solution. After the injection, the condition of the animal became worse in that it no longer laid itself down. On the contrary, after remaining on its feet all night, it fell over. At 8 A. M. next day, March 28, 1897, the rectal temperature was 39.2° C., at midday 41° C., afternoon of the same day at 6 P. M. it was 42° C. Especially noticeable is the rapidly fatal course of the disease in both instances after the injection of the antitoxin, death occurring in each case within 24 hours. That the antitoxin was injected very early in the disease, I do not in the least doubt. The history of both cases shows that the disease was just commencing. That I used enough antitoxin cannot be doubted. Perhaps it might have been better had I tried to obtain a slower working from the remedy by using subcutaneous instead of intravenous injection or by giving fractional doses scattered over the first 24 to 36 hours instead of the whole dose at one time. The undoubted and remarkable rise of temperature after the injections, seems to me to be referable to the probable fact that the blood was markedly altered by the antitoxin injection. I also harbor the conviction that only through the agency of the antitoxin, and that alone, could the further course of the disease be so influenced for the worse in so short a period of time.—(*Deutch. Thierärzt. Woch.*)

THE DANGER ATTENDING THE USE OF MEAT OF TUBERCULOUS ANIMALS [*Galtier*].—The author at many different times measured the risks accompanying the indiscriminate use of the meat of tuberculous animals. In an article published in 1891, embracing his attempts at feeding poultry, cats, dogs and guinea-pigs with the meat of tuberculous cows, he did not succeed in producing the disease in the animals thus experimented upon. In that same year he fed two calves and two pigs for many weeks upon tuberculous meat, or meat of condemned animals, with negative results. During the years 1892 and 1893, he made a new food experiment upon two young pigs with similar results. Relying upon these negative results, which, by the way, coincide with the results achieved by Nocard and Perroncito, Galtier concluded that mankind has strong reason to doubt that the use of meat of tuberculous animals is attended with dangerous consequences; that no reason existed for the public condemnation of the meat of tuberculous animals in all cases; that one ought to rest content with the seizure of animals that are markedly emaciated as well as tuberculous or that have a decided degree of tuberculosis; that it is sufficient in all other cases to seize merely the diseased organs. During 1894–5 G. for five months fed two calves and two young pigs upon infected meat, failing again in his object, even though the juice of this meat injected into the peritoneal cavity of guinea-pigs caused tuberculosis in them. It, therefore, appears, says G., that the use of such meat by persons is not attended with so much risk as was supposed, either because the virulence of such meat and the blood contained in it is mild or because eating the meat is far from being the same thing as being inoculated by the juices or germ elements contained in such meat. Strauss, in his latest work on tuberculosis, declares that he does not know of a single case in which it has been proved that human tuberculosis has resulted from the use of tuberculous meat. Galtier formulates his views in reference to meat inspection as follows: 1. Seizure of the *entire cadaver*, with exception of the hide, when there exists *simultaneously* with the tuberculosis *marked emaciation*, irrespective of what the nature of the case may be. 2. Seizure of the entire body, the hide excepted, in case of muscle tuberculosis, a very, very rare occurrence. 3. Seizure of the entire body, hide or adipose tissue excepted, where the latter can be used for industrial purposes, in case of simultaneous tuberculosis of the thoracic cavity (involving one or more organs and the lymphatic glands therein), and of the abdominal cavity (involving one or more organs and the lymphatic glands therein), or where the general condition of the animal is poor as a result of many and diffuse tubercular lesions. 4. Seizure of the entire body, etc., when the bodily nutrition being poor, well-marked tuberculosis exists in one or the other cavity, with commencing tuberculosis in one or the other cavity; in a word, when simultaneous tuberculosis exists in both cavities, even though only beginning in one of them. 5. Seizure of the entire body, etc., where well-marked tuberculosis exists separately and alone in either of the cavities, including tuberculosis of the pleura and peritoneum respectively. 6. In other cases, where the bodily condition being good, the tuberculosis is only slightly advanced in either cavity, separately or combined, remove only diseased organs and also the ribs and abdominal walls.—(*Oest. Monatsch. f. Thierhlk w. Revue.*)

BELGIAN REVIEW.

Extra-Uterine Gestation in Cows [*By Mr. Booy*].—Called to visit a cow, primiparous, in labor for three days, the author observed the peculiarity that no change had taken place in genital organs, and that they presented none of the alterations noticed ordinarily at the time of parturition. He advised watching; but the fourth day, observing at the base of the tail the appearance of a tumor of the size of a man's head, which proved to be made by the extremities of the legs of the fœtus, interference became imperative. Vaginal examination revealed through the walls the presence of the fœtal extremities. By rectal exploring, the croup, head and parts of the extremities were made out and the movements of the well-alive fœtus readily detected. In the presence of this extra-uterine gestation, it was decided to kill the cow to save the fœtus. On opening the abdominal cavity and tearing the envelopes a live calf was moved, weighing 38 kilos, which was successfully raised. The fœtal envelopes were inclosed in a menbranous sac, very thin, pyriform, partly engaged in the pelvis and adherent to it. The uterus was normal in size and free from any injury.—(*Annales de Med. Vet.*)

TEARING OF THE SESAMOID LIGAMENTS AND OF THOSE OF INTERPHALANGEAL JOINTS [*By MM. Degivé and Hendrioux*].—If ruptures and lacerations of the tendinous and ligamentous apparatus of the fetlock are well known, their tearing off from their point of insertion are not as common. The following four clinical cases will serve to show their history. 1. *Rupture and Disinsertion of the Inferior Sesamoid Ligamentous Apparatus of Both Hind Legs.*—Light draught horse, eight years old, laid up with a slight lameness on one hind leg. Returned to work, he became affected with hæmoglobinuria. When brought to the authors for treatment it was observed that the standing position was very painful; the resting of the hind legs took place on the posterior face of the fetlock; there was a fissure above the coronet and a separation of the cutidura with bloody oozing; the legs from the hocks down were swollen, hot and painful. At the post-mortem, a complete giving away of the inferior sesamoid ligaments at their upper insertion was found. 2. *Disinsertion of the Perforans and Perforatus Tendons.*—An eight-year-old pony, lame on the near fore leg was treated with a blistering application. After three weeks of treatment he was exercised, and had an attack of acute laminitis, which disappeared by proper treatment. He was sent to the country for his convalescence; he reached the place in a very bad condition; he could scarcely walk, his standing was very painful, the resting of his hind feet took place on the heels, the toes were turned upwards; there was a marked fissure above the cutidura. The tendon of the perforatus and the suspensory ligament had their normal firmness, but the perforans tendon was relaxed; the lower extremity of the hind legs was much swollen. The animal was destroyed and at the post-mortem the following series of serious lesions was discovered: the perforans tendons of the four extremities were torn from their plantar insertions; on the hind legs there was a complete breaking up at the semilunar crests, the small sesamoid, at the os coronæ. On the anterior, the lesions were principally marked at the plantar aponeurosis. 3. *Partial Disinsertion of the Plantar Aponeurosis on a Hind Leg.*—Heavy draught horse, 10 years old, which, after a violent effort to start a heavy load, could no more rest his foot on the ground. The foot rested on the toe, there was a great deal of soreness on pressure of the frog, also when the foot was rotated from outwards inwards. Diagnosis was not made. After ten days of treatment of local continued irrigation, the animal, not improved, was destroyed. Lesions: large bloody extravasation in the sesamoid sheath; partial disinsertion bilateral of the plantar aponeurosis with breaking up of small bony pieces. 4. *Suspected Disinsertion of the Suspensory Ligaments on Both Hind Legs.*—Racing mare, four years old, convalescing from an acute lobar pneumonia; after a walk of four hundred yards became lame on both hind legs. Standing was painful and difficult; both hind fetlocks rested on the ground, the phalanges bent downwards and backwards. There was much infiltration at the fetlock and in the region of the tendon; both ends of the suspensory ligament were relaxed and swollen. As the animal was not destroyed, the diagnosis could not be confirmed, but to all appearance was correct. * * * * From these observations, it is shown that the *disinsertion* may be *complete* or *incomplete;* with separation of the parts or simple elongation; or again *partial* or *total.* Disinsertion has for occasioning cause: excessive functional action either in its intensity, its rapidity or its duration. 5. Complete plantar disinsertions are characterized by: 1. Marked extension of the articulation, corresponding to the injured tendon or ligament; 2. By a relaxation of the separated ligamentous organ; 3. By a swelling, first œdematous, later inflammatory; 4. By sudden pain, spontaneously manifested or brought on by pressure, traction or rotation. Incomplete or partial disinsertions are difficult to recognize when the surfaces remain in contact. Localized to the plantar aponeurosis, they may give rise to similar symptoms to those of podotrochilitis, for which they may be mistaken.—(*Annales de Med. Vet.*)

FRENCH REVIEW.

STOMACHEAL INDIGESTION IN THE HORSE [*By Mr. E. Michelin*].—Of course, all horses that vomit during attacks of colic do not have ruptured stomachs, and as a consequence die. The author reports one more proof of this in the *Recueil de Medec. Vet.*, in speaking of a mare that, after a journey of some 20 miles, drank half a pail of water, refused her meal, and was taken with colic. She paws, looks at her flanks, lays down, mouth is dry, breath acid, she has vomited three times and expels through nose undigested food, with a characteristic chymous odor, indicating their origin. Chamomile tea and alcohol, injection of 10 centigrammes of pilocarpine, stimulating friction and walking is the treatment. After a few hours of relief, late in the evening the trouble returns more severe than before. The colic is very violent, a severe diarrhœa has taken place, the body is covered with cold sweat, the extremities are cold, the pulse is scarcely perceptible; in half an hour she had three spells of vomiting, and the author, considering the animal lost, orders some hygienic attentions for the balance of the night and retires to prepare the report of the death of the animal. . . . In the morning the mare was well. After eating her ration, and stealing that of her neighbor, she travelled her 28 kilometres.

ŒSOPHAGEAL OBSTRUCTIONS.—Called to see an old horse which had swallowed an apple and presented all the indications of choking. Mr. Esmien, reporting the case in the *Recueil*, tried various means to relieve the patient. External taxis, with moderate pressure upwards, after oiling the œsophagus with a small drench, proved unsuccessful. The difficult catheterism carefully applied revealed the exact position of the apple, but did not permit its displacement. As it was located in a good place for the operation of œsophagotomy, it was performed the next day, and in waiting the author gave 15 centigrammes of pilocarpine and eserine each. The next morning the animal was well—he had salivated profusely and about three hours after the injection had drank a large pailful of water without losing a drop. In a second case, that of a three-months-old calf, the same treatment was followed with the same results, when all the other means recommended—taxis, the use of the probang, and even puncture of the rumen—had failed. In two hours the calf was well.

CRYPTORCHIDY.—The operation of castration in cryptorchids is now no longer the property of the old-fashioned gelder; it has entered in the domain of veterinary surgery, where it always belonged, and now the operation thoroughly taught in veterinary schools is performed by veterinarians with as much willingness as in days gone by it was declined as too dangerous to the patient, too difficult for the surgeon and too risky for the interests of the owner. Yet the operation has received many modifications since the first days of its introduction in the schools. Prof. Labat, of Toulouse, has also published in the *Revue Veterinaire* the results of a long series of operations which he has performed, and which, with one exception only, proved successful in all the others. The 53 cases upon which he operated were as follows: 1st. Eight cases of double abdominal cryptorchidy, 8 recoveries. 2d. Thirty-seven cases of unilateral abdominal cryptorchidy, 36 recoveries and one death. In this case the operation was complicated by an eventuation, with peritonitis, that killed the horse in three days. 3d. Eight cases of inguinal cryptorchidy, with 8 recoveries. The results of the operations as far as the character and disposition of the patients were all most satisfactory.

PLANTAR NEUROTOMY.—How much has been said against the propriety of the operation of plantar neurotomy, and how near has the discovery of Sewell been of being pushed entirely aside from the therapeutics of some peculiar forms of lameness. In our days, on the contrary, specially on the Continent, it has been more thoroughly studied, its indications, its applications, its sequelæ, are familiar to all. And yet there are still some practitioners who hesitate. In the *Journal of Zootechnie*, Prof. Cadeac brings another word of encouragement to the hesitating surgeons. After considering and criticising the objections and the complications, after showing the proper way of neurotomizing, viz.: a free incision, the removal of a piece of nerve, not less than *five inches*, and a cicatrization by first intention, through proper antiseptic measures. He concludes his remarks by saying: Neurotomize *always* for navicular disease, never for chronic laminitis.

FOREIGN BODY IN THE PHARYNX OF A COW.—Mr. Mathes reports in the *Journal of Zootechnie* a very interesting case of this class of lesion, in which a cow presented all the indications of a severe traumatism of the left guttural region, characterized by swelling, phlegmonous inflammation, difficulty of mastication, abundant salivation, etc. A first examination of the fauces with the mouth kept open by speculum, revealed nothing at first; at a second, however, a piece of wire was detected. It is secured across the pharynx, obliquely from upwards downwards, and right to left. Its lower extremity pierced through the wall of the pharynx, back of the pillars of the soft palate, which is immobilized, its upper extremity rests near the gutteral opening of the right nasal cavity. The wire was removed comparatively easily and the animal presented no complication.

AMYOTROPHY OF THE ANTEA AND POSTEA SPINATIS (SWEENY) BY CONTUSIONS OF THE SUBSCAPULAR NERVE.—Mr. C. Lesbre related that a mare, ridden under the saddle, ran away, threw her rider and fell violently on the right side. She gets up with difficulty, is lame on three legs. She is placed in slings, a blistering friction is applied on the point of the shoulder. After a few hours' rest, she seems better. She can walk some; when the right fore leg is put on the ground, the point of the shoulder is suddenly carried outwards, and projects outwards as if there was luxation of the shoulder. Excluding the diagnosis of rupture of muscles by the absence of greater inflammatory signs and more marked lameness, the case was considered as one of contusion of the subscapular nerve, with paralysis of the muscles where it ramifies. Progressive atrophy soon revealed itself and rapidly resulted in a complete emaciation of the shoulder. The long abductor of the arm, however, remained of its natural size, or perhaps is somewhat hypertrophied—it does not receive its nervous supplies from the same source. After 18 months the atrophy still exists, except the antea spinatis, which has improved. The only treatment used has been moderate exercise and proper gymnastic practice. Perhaps electrotherapy might help.—(*J. de Zootechnie*).

WOUND, EXFOLIATION AND TRANSVERSAL SECTION OF THE EXTENSORS OF THE PHALANGES OF THE RIGHT-HIND LEG [*By Prof. A. Labat*].—The record of this unusually interesting case is that of a mare which, during the passage over a platform to enter a railroad car, made a misstep and partly fell in such a manner that her right hind leg was caught between the car and the platform. In trying to free herself, she struggled violently and made a large wound in front of her cannon bone, just below the hock, with irregular and ragged borders, at the bottom of which appeared the tendons of both extensors of the phalanges cut half way in their thickness; the little pedal muscle was partly cut, and the tendon of the flexor metatarsi was also slightly affected. The case was serious on account of the aspect of the wound, as well as by the conditions of the tendons, which rendered possible an impossible action of the tendon, and again on account of the position of the wound, near a centre of motion; of the complications likely to occur, etc. The treatment, however, was simple and the results most satisfactory. Use of the slings at intervals as the mare, of a nervous nature, would permit. Cold irrigations, antiseptic dressings, iodoform applications, lotions of bichloride of mercury solution. The injured tendons in course of time sloughed and the division was çomplete. A piece of necrosed bone from the principal metatarsal exfoliated after some time, and in forty-seven days the cicatrix was complete. The animal was free from lameness, whether in walking or trotting, but there was a little irregularity of action, characterized by more flexion at the hock than normally. This was due to the fact that the upper end of the divided tendons was attached to the thick cicatricial tissue which remained there, and thus was adding as an annex to the flexor metatarsi. The lower end of the divided tendons was also adherent to the firm and hard cicatrix, and this fibrous band in front of the fetlock and phalanges resisted the possible excessive actions of the flexor muscles. All of which formed an advantageous condition, which explained the regularity of action of the animal.—(*Revue Veterin.*)

CONTRIBUTION TO THE STUDY OF CAPPED HOCK [*By M. G. Pichon*].—A three-year-old mare had a large hygroma of the left hock. The accumulation of the serosity was so large that it lamed the animal, whose hock was quite painful. Thrown on account of the very nervous condition of the animal, it was found on manipulating the tumor that on its inside a small hard, elongated body could be felt, floating in the serosity, fixed by one of its extremities on the supero-external wall of the hygroma, but free by the other. The hairs were cut over the tumor, the skin sterilized with cresyled water, the cyst was freely opened on its posterior wall, the sac emptied, the little hard body extirpated. The cavity of the cyst was cleaned with weak solution of tincture of iodine, and the edges of the wound sewed up with sutures, injections of cresyled water being made through a drainage tube placed at the lower end of the incision. The wound healed rapidly and left but little cicatrix. The foreign body was formed of a very hard fibrous substance, covered here and there with large vesicles, filled with serosity. It measured 4 centimeters in length.—(*Rec. de Med. Vet.*)

AMERICAN REVIEW.

INTRAVENOUS INJECTION OF ARTIFICIAL BLOOD-SERUM FOR THE RELIEF OF TOXÆMIA AND EXTENSIVE HÆMORRHAGES [*By Thomas V. Simpson*, *V.S.*, *Yorkton*, *N. W. T.*].—The author directs attention to the intravenous or subcutaneous injection of saline solution for relief of toxæmia, due to specific micro-organisms or poisons from other sources, and for combatting extensive hæmorrhage. Best results have been obtained in collapse, due to loss of blood, the artificial serum taking place of lost blood and having hæmostatic action. In grave septic infection or intoxication it is clearly indicated. When large injection has been given for toxæmia there seems to be only very slight improvement for a few minutes; then there develops a strong rapid pulse, rigors, great uneasiness, and the sweat-glands and kidneys pour forth their excretions in large quantities. A Clydesdale mare, weighing 1300 pounds, gave birth to dead foal. In her struggles got her head and feet fast under manger, and had been in that position for three or four hours; quickly got on feet and showed fever. I found she had not ejected the fœtal coverings; pulse 60, temperature a little above normal. Gave her a uterine injection of creolin in solution. At night she was lying down; pulse and temperature high. As she was in good condition I decided to try venesection and removed eight quarts, which appeared to give relief, the pulse now being quite soft, while before it was hard and full. Next morning found her a great deal worse; pulse 100, temperature high. Was lying down and showing well-marked symptoms of septic metritis. Prognosis doubtful. Then decided to try intravenous injection of salt solution, and ordered five gallons of water to be boiled. In meantime curetted uterus, after injecting creolin solution. Then she ejected all the creolin solution, and I gave her an injection of weak iodine solution, which she retained. At 11 A. M. injected saline solution into jugular, taking about forty-five minutes to do so. In evening looked a good deal brighter; temperature not much up, pulse 80; passes clear urine three or four times an hour. Gave three more gallons of saline fluid intravenously, and clothed heavily to induce perspiration; gave another uterine injection of solution of iodine; would frequently pass a small quantity of dirty-brown putrid matter from uterus. Next day pulse and temperature the same, slight rigors and passage of putrid fluid taking place. Then gave seven gallons of saline fluid intravenously. Through neglect assistant allowed a little air to enter injection-tube, and thence into jugular, causing no inconvenience other than increasing heart's action from 80 to 100 beats per minute. Stood still during operation, but in ten minutes laid down in great pain, shivered and broke out in sweat; breathing labored, heart 100 and strong. Large quantity brown fluid escaped from uterus when lay down. Urine continuous for half an hour. Got up and ate bran-mash. Continued to urinate and perspire till next day, and in two days all symptoms of toxæmia had disappeared. The solution used was made of one teaspoonful of sodium chloride to quart boiled water. That used in Massachusetts General Hospital is highly recommended: 0.1 gramme (grs. jss) CaCl, 0.75 gramme (gr. x) KCl, to 1000 c.c. (qts. ij) normal saline solution. The apparatus was ordinary household fountain syringe, and required amount rubber tubing. End of tube fitted to ordinary horse canula. Vein opened with lance after being raised, and while still raised canula is inserted. Care must be taken that no air is in tube before injecting. Everything thoroughly scalded before using. The infusion of saline fluid is indicated in following conditions: Serious hæmorrhage from any cause or hæmorrhagic collapse; septicæmia or uræmia in all infectious diseases in which there is a well-marked toxic condition of blood, tetanus, azoturia, strychnine poisoning, etc. Has been used with good results in acute pneumonia in man. In all forms of grave poisoning it is surely indicated. When infusion is used for relief of toxic condition of blood should be immediately preceded by venesection.—(*Jour. Comp. Med. and Vet. Arch.*)

OPERATION OF ARYTENECTOMY ASSISTED BY ELECTRICAL LAMP [*By W. H. Arrowsmith, D.V.S., Jersey City, N. J.*].—This operation always considered difficult and unsatisfactory because cutting out of cartilages must be done at 4 to 6 inches distant from external wound, the wound being almost filled by operator's hands, speculum and instruments. Being unable to see, the knife may slip or curved-scissors' points penetrate the soft parts, or the tenaculums or forceps grasp portions of the mucous membranes with the cartilages, and the tissues injured. When the cartilages are enucleated the effort to take up the mucous membrane properly with catgut suture becomes almost impossible, on account of the inability to see because of the small aperture and the frequent accumulation of blood-clots. During latter part of 1896, the writer received at his hospital a valuable mare, five years old, to be operated on for ossification of the arytenoid cartilages, and had an electrician make an electric lamp, the globe of which was only one-fourth of an inch in diameter and affixed to the end of a hard black-rubber handle twelve inches long, through which passed two fine copper wires connecting with the platinum loop in the globe. At the other end of the handle was a thumb-press so placed that the light might be turned on and off at will of the operator. The wires were then connected to three dry batteries, and we were prepared to illuminate the laryngeal cavity. The mare was prepared, thrown, and placed upon her back; a tracheotomy-tube inserted midway down the trachea; trachea was opened just below cricoid cartilage, by separating muscles and cutting six rings, and the parts held open by two spoon-shaped blunt tenaculums, especially made. The trachea between the upper opening and the tracheotomy-tube was filled with soft sterilized sponges, to which cords were attached and fastened outside, so that sponges could not slip down into cavity of lung. The lamp was then inserted into laryngeal cavity and light turned on, when all parts were distinctly seen, and each cut of knife or scissors could be followed, and forceps placed exactly where operator wished; the whole ossified cartilages were enucleated and the mucous membrane taken up with catgut sutures and properly tied, each cartilaginous ring drawn together with catgut sutures and the muscles with silver sutures. The only interference with operation was at times the accumulation of blood in laryngeal cavity and on the globe of lamp. Mare made rapid and complete recovery, and three weeks later could be speeded without any noise or emphatic breathing, and was then turned out.—(*Jour. Comp. Med. and Vet. Arch.*)

REVIEW OF BIOLOGY.

PARATHYROID FUNCTION [*By Prof. Moussec of Alfort*].—In 1892 and 1893, after a series of communications upon the thyroid function, the author had expressed the idea that two functions had been destroyed when the ablation of the thyroid glands and of the parathyroid glandules were made together. However, the doctrine became classic of the supply existing between the two sorts of organs. Mr. Moussec presents the results of a new series of observations: He has performed 55 parathyroidectomies; 32 have died, 23 have resisted. From these the opinion is given that these two organs have evidently a distinct function—one thyroid, whose ablation brings on chronic troubles, the other parathyroid, which brings on acute accidents.—(*Soc. of Biol.*)

THYROID FUNCTION [*By the Same.*].—When on sucking kittens the thyroids are removed, but at least two parathyroids with their vascular connections are left intact, the operated live, but their growth is arrested. Their development in height is arrested; that in width seems increased in proportion. The legs are short, abdomen becomes round, the skin shrinks by generalized myxœdematous infiltration, the animal assumes an old characterized appearance This myxœdematous cretinism is well marked in a few months. In young cats the results are the same, also in birds. In conclusion of these and previously published facts, the author says: The thyroid function is one, in mammalia and in birds; it presides over the general development of the organism, and cannot be replaced; its importance is greater during the period of growth than in adult age, when, difficult to define, it seems to become secondary.—(*Soc. of Biol.*)

VIRULENCY OF MUSCLES IN TUBERCULOUS MAN.—It results from numerous experiments that the virulency of muscles is very seldom observed in tuberculous bovines. Also, in other animal species the bacillus does not seem to be present in the muscles, only in few cases, even with generalized tuberculosis. According to some published facts, the muscles of the tuberculous man are, on the contrary, very virulent: Gratia and Lienaux, in two experiments, and Steinheil in eight, have obtained positive results in all. Prof. Leclainche has undertaken new experiments having for their object to establish the virulency of the muscles of the calf (leg) of men having died from subacute or chronic tuberculosis. He found that in man as in the various species of animals, the virulency of the tuberculous muscles is altogether exceptional.—(*Soc. of Biol.*)

HORSES WEAR SNOWSHOES.—All the horses working at the Placer mine, under the shadow of Pilot Peak, Plumas County, California, wear snowshoes. The altitude of the place is about 5000 feet, and enormous quantities of snow fall there in the winter, not infrequently reaching the depth of twenty feet. Only California-bred horses are used. It has been found that these are the best; and, if possible, mountain horses are secured—those that are raised at high altitudes. The horses go right along in the snow. They usually take a fast walk, but sometimes they trot a little.

MINNESOTA'S AMENDED VETERINARY LAW.

AN ACT TO AMEND SECTIONS THREE (3) AND EIGHT (8) OF CHAPTER THIRTY-ONE (31) OF THE GENERAL LAWS OF THE STATE OF MINNESOTA FOR THE YEAR 1893, RELATING TO THE PRACTICE OF VETERINARY MEDICINE, SURGERY AND DENTISTRY.

Be it enacted by the Legislature of the State of Minnesota:

Section 1. That Section three of Chapter thirty-one of the general laws of the State of Minnesota for the year eighteen hundred and ninety-three (1893) be and the same is hereby amended so as to read as follows:

Sec. 3. The Governor of the State shall appoint a board of examiners within thirty days after the passage of this act, said board to be known as the State Board of Veterinary Medical Examiners.

This board shall consist of five qualified veterinarians, each of whom shall be graduates of a legally authorized veterinary college or university, who shall hold office for two years after such appointment or until their successors are appointed.

Sec. 2. That Section eight of Chapter thirty-one (31) of the general laws of the State of Minnesota for the year eighteen hundred and ninety-three (1893), be and the same is hereby amended so as to read as follows:

Sec. 8. All persons commencing the practice of veterinary medicine, surgery or dentistry in this State after the passage of this act, shall be graduates of a legally authorized veterinary college or university, and shall pass the examination required by said State Board of Veterinary Examiners.

Sec. 3. All acts and parts of acts inconsistent with this act are hereby repealed.

Sec. 4. This act shall take effect and be in force from and after its passage.

Approved April 23, 1897.

COLLEGE COMMENCEMENTS.

NEW YORK STATE VETERINARY COLLEGE.

At the annual commencement of Cornell University, June 17th, 1897, the following received the degree of Doctor of Veterinary Medicine: Walter Emerson Howe, V.S., Delphi, N. Y.; Herman Reeve Ryder, V.S., Delphi, N. Y.; Walter Edward Weihe, Wilkesbarre, Pa. The Horace K. White prizes to the most meritorious students in veterinary science were awarded to W. E. Howe and H. R. Ryder, who were adjudged equal in merit.

The graduation thesis presented by the candidates were: "Contagious Pneumonia in the Horse," by W. E. Weihe, based upon cases observed in the hospital; and "The Physiological Temperature of Some Domestic Animals," by W. E. Howe and H. R. Ryder, a work based on careful research on the different genera of domestic animals under varying conditions, and one of no little value in its bearing on modern medicine and especially on toxine testing for glanders and tuberculosis.

SOCIETY MEETINGS.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The February meeting of the Keystone Veterinary Medical Association was held on the 9th with the following members of the profession present: Drs. R. S. Huidekoper, H. D. Gill, H. D. Martein, W. W. Martin, J. D. Houldsworth, S. J. J. Harger, Otto G. Noack, H. P. Eves, J. R. Hart, W. Horace Hoskins, Charles Lintz, James T. McAnulty, T. B. Rayner, and W. L. Rhoads.

Rev. J. D. Diederick, of Flowertown, Pa., gave a very interesting talk on "The Silo, Ensilage, Ensilage-fed Cattle, their Condition, and Results." His talk showed him to be thoroughly conversant with his subject, he having made a practical study of this question for several years in its most minute detail, thus making the talk doubly pleasant and interesting to the practical veterianarian who is interested in cattle practice or has given the food question a study. He thought the white Southern corn the best variety, as the stalk is sweet and succulent as well as the ear. The better plan of planting is three or four feet apart and three or four grains to the running foot, this, if cut when the ears are in good condition for boiling, then shredded (as this is much better than the old method, which chopped the stalks and ears; the shredding not only puts the fodder itself in better condition, but has the corn more evenly distributed), and at this time properly housed makes, if opened rightly (that is, by removing all the decaying top at first) a fine June food for the balance ration of winter, and it should be used only as a balance ration, for as a food alone it soon causes the cattle to break down; but if used properly, it is *par excellence*, taking the place of roots, etc., and is a better appetizer, keeping the flow of the milk regular. At the conclusion of his much-appreciated talk Mr. Diederick was stormed with questions. These he readily answered, amply earning the hearty vote of thanks later extended to him by the Association.

The Association now adjourned its meeting and went in a body to the banquet-room in the Odd Fellows' Temple, where a luncheon was awaiting them, and if our figure-heads at Washington took half the interest in doing their duty toward Cuba that these veterinarians did in doing justice to the duty before them, Cuba Libre would be established within twenty-four hours. After the invigorating influence of the Blue Points had begun to be felt, mixed, perhaps, with some of the food-product that has served to give one of our Western cities world-wide renown, then we heard how the Association had been useful in the home of one veterinarian, being for him a means of escape when probably a jack-pot was to be opened elsewhere; we then learned of the productiveness of farms in the northeastern section of Jersey. We learned also while corn grew there very sparingly, the air seemed just suited to crows and dogs. We heard from Dr. Gill what progress science was making in the line of toxins. After his interesting talk, we were entertained by Dr. Huidekoper telling us what he thought of toxins and what he knew of navicular disease. Those who know Huidekoper know he is always interesting, and this was certainly no exception to his general rule. In fact every one was called upon to say something, and each did his part, giving some new ideas or brightening up some dark spots within the horizon of the veterinarian who is now striving to keep his profession on an honorable plane for the advent of better times.

The adjournment from this pleasant second session of the February meeting was now made on account of the distance some were from home.

The April meeting of the Keystone Veterinary Medical Association was called to order by Vice-President James B. Rayner, upon whom the presidential duties now rest through the irreparable loss to the association by the death of our late co-worker, esteemed fellow-member and beloved President, John R. Hart. Though the attendance at this meeting was light in number, those who were here brought hearts full of sorrow. Individually realizing the loss to each of us was but a fraction of that sustained by the profession as a whole, and this could be but an iota of the loss to the bereaved family of our worthy colleague, who as a reward for his earnest, honest work here was taken to a brighter, happier home. Though the majority of those present had few words to express their sorrow, this was due to their having realized the loss to the profession and themselves individually, feeling that it would take a long time for his most earnest friends and co-workers to close up the gap left by his moving onward and upward to a new life. Everyone seemed impressed with his broad-minded, full-hearted, conscientious life, a life which could well be held up as an example to every young man, a life which was not a theory but a living proof of what could be done by an honest man. It has been said that an honest man is the noblest of God's handiwork, and surely if such exists or has existed, Dr. John R. Hart was of the number, and we cannot say more of him than that which we hear from every side, among all classes and walks of life. He was an honest man.

Drs. W. H. Hoskins, F. S. Allen and W. S. Kooker were appointed as a committee to draft resolutions upon the death of Dr. John R. Hart.

Some voluntary contributions were received toward the floral emblem sent to the family of our late President as a mark of sympathy, sorrow and respect by the K. V. M. A., and it was ordered by a vote of the Association that the balance of $10 be paid out of the Association fund.

Meeting adjourned to meet May 11, 1897.

The May meeting of the Keystone Veterinary Medical Association was called to order by Dr. Thomas B. Rayner as Vice-President James B. Rayner was not present. The members of the profession in attendance were Drs. Chas. M. Cullen, H. P. Eves, H. D. Martein, W. H. Hoskins, Chas. Lintz, John W. Adams, Thomas B. Rayner, and W. L. Rhoads.

Dr. W. H. Hoskins, as chairman of the Committee on Resolutions, reported progress.

He then brought to the notice of the Association some legislation now on the move at Harrisburg, and asked that the sentiment of the meeting might be conveyed to Secretary of Agriculture Wilson and to Senator Prichett as well as all others likely to be interested.

He also spoke of a bill now pending for the purpose of establishing a number of inspectors along the border line of the State and the taxation of all carcasses coming in $2 per head.

The applications of Dr. John W. Adams and Dr. H. D. Martein for membership were now read and referred to the Board of Censors.

Dr. John W. Adams was now introduced and addressed the Association on meat inspection as it applies to large cities. After speaking of the various diseases met with, making beef, veal, mutton and pork unfit for food, he then went on to tell of the inspection of Philadelphia's meat supply, which, despite the best efforts of the inspectors, is at best but a farce, when we come to know that Philadelphia has over 150 slaughter-houses and but four inspectors, the chief of whom is a layman and his assistant as deputy, with no special qualifications; the other members of the inspection force are two veterinarians, who are finally called to pass upon carcasses in question. This inadequate force is augmented by a consulting veterinarian, whose services are seldom called upon. The great number of slaughter-houses makes it impossible for the inspectors to complete their rounds in a week, yet every day slaughter goes on in these places. Better inspection is needed; central abattoirs are a necessity; district slaughter-houses will be the only means of bettering the present conditions. He then spoke of the meat inspection of the large cities of Germany. In the abattoirs of Berlin, animals overheated or footsore are not allowed to be slaughtered. The deputy goes first, then the inspector comes, and he examines liver, lungs, and parts of carcass; if not diseased it is stamped upon forearm, hip region, etc. If meat is found without this stamp a question is immediately raised and a fine imposed. The inspection of pork for trichinia is especially thorough, four sections being taken and subjected to microscopical test. Calves are watched: intestines and mesenteric glands for tuberculosis; lungs for verminous bronchitis; if lean and unthrifty, are condemned on general principles. You cannot buy bruised or unhealthy meat of any kind. The horse meat to be sold must go under the same rigid examination and cannot be sold from the same store as other meats. He said by placing meat in cold storage the odor was kept down, and all meat coming from these places should be closely watched. He has seen here slaughter-houses in full operation with open doors next to houses infected with scarlatina, measles, diphtheria, etc., for the germs of which we have no better media than fresh raw meat. Thus every section into which this meat went was liable to a scourge of these diseases. The general public are entitled to better protection, and the best way to give it is first to awaken them to the true state of affairs through the columns of the press, and as the medical professions as a rule seem indifferent to the present state of affairs as regards the meat and milk supply of the community, from which they not only gain a livelihood but many of them a competency, it becomes the duty of the veterinarian as a humanitarian to do all in his power to improve the present existing conditions. During the general discussion the present deplorable state of affairs was more clearly shown, much of the meat now exposed for sale having the diseased parts trimmed off. The Chicago meat as a rule is better than home-dressed meat, as the inspection is more thorough, while the taxpayer and meat consumer feels secure, thinking the city fathers are protecting his health by a thorough meat and milk inspection this responsibility is thrown upon the butcher, vendor or producer. Prof. Marks says in his experience he has found the veterinarians do not stand up for their rights; they are not aggressive enough, but will stand back and see positions which they alone are qualified to fill held by medical men, laymen or quacks who have a political pull.

Dr. Cullen felt that the best way to remedy the present condition was by the co-working of the veterinarians, the employment of legal talent, and the use of the press.

In answer to some questions regarding sheep, it was said that the lungs were used for making soup in Germany, and in the inspection these were closely watched for verminous bronchitis, also that gid or turnsick was due to a cerebral cyst caused by tænia cœnurus. This disease is directly transmissible to man; thus making the meat of these animals unfit for food. The nodular disease of sheep was really intestinal tumors caused by an invasion of a parasite, and in some sections of the South made sheep husbandry unprofitable. These tumors resemble tubercular nodules, and may be mistaken for them.

Dr. Hoskins now reported the case of a collie dog having frequent micturation and each time ending with a few drops of blood; this was finally cured by charging the drinking water with bicarbonate of soda and dosing with sanmetto.

Dr. H. D. Martien then exhibited a number of fine specimens of intestinal calculi taken from horses.

A hearty vote of thanks was extended to Dr. John W. Adams for his kindness as speaker of the evening, when the Association adjourned to meet June 15, 1897, which will be the final meeting for the session of 1896–97.

W. L. RHOADS, D. V. S., *Secretary*.

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

That the intellectual programme to be presented at Nashville is to be of a high order and of good proportions is now assured by the announcement of the papers that have been received by the Secretary, through whose courtesy the REVIEW is enabled to present the following, including those announced in the June issue:

Prof. Leonard Pearson, Philadelphia, Pa., "Tuberculosis."

Prof. E. A. A. Grange, Michigan, "Infectious Mammitis in Cows."

Prof. E. P. Niles, Blacksburg, Virginia, title of subject not stated.

Dr. M. E. Knowles, Montana, "Some Diseases of the Horse Peculiar to the Mountain Region."

Dr. Charles Ellis, St. Louis, Mo., "Our Meat Inspection."

Dr. J. W. Connoway, Columbia, Mo., "Texas Fever Investigation."

Dr. Wm. Dougherty, Baltimore, Md., title of subject not yet stated.

Prof. S. J. J. Harger, Philadelphia, Pa.,

Dr. W. H. Dalrymple, Baton Rouge, La.,

A number of St. Louis veterinarians have expressed their intentions of attending the Nashville meeting.

The veterinarians of Indiana will hold a meeting at Indianapolis early this month. Resident State Secretary T. J. Turner hopes to secure a large delegation to the Nashville meeting.

Dr. M. E. Knowles will be at Nashville and will advocate the claims of Montana for next year's meeting, with a trip to Yellowstone Park as a special attraction.

So far as the REVIEW is informed, no local committee of arrangements has been appointed, but Dr. W. C. Rayen, who was so active in securing the meeting for Nashville, is beginning early to pave the way for a pleasant social meeting. It is probable that the headquarters of the Association will be at the Hotel Tulaine, which has an assembly hall capable of seating 250.

Some influence is being brought to bear upon the Association of Experiment Station Veterinarians—which was organized during the Buffalo meeting last year—to unite with the National organization, they to form one section of the mooted plan of establishing section work. It would be of immense advantage to both. It would be pleasant to work together in a business, social and scientific sense, and the papers presented by the Experiment Station workers would add greatly to the scientific value of the reports of the National Association. If, then, another section be made of practical papers and discussions, and still another for the business aspect of the association, in which all subjects pertaining to the advancement and well-being of the profession would receive consideration, that would be about all the "section plan" that would be necessary for a few years at least.

CHICAGO VETERINARY SOCIETY.

The June meeting was called to order by the President on the evening of 10th, the first order of business being a banquet, at which twenty-two members were present.

After the banquet the minutes of the previous meeting were read and approved.

Twenty-one letters were then read by the Secretary from veterinarians throughout the State, many of whom were Assistant State Veterinarians, and who wrote notifying the society that they had resigned their offices, owing to the appointment by the Governor of an unqualified man to the office of State Veterinarian. Moved by Dr. Robertson, seconded by Dr. E. L. Quitman, that the Secretary send to the *Breeders' Gazette* a synopsis of these minutes, with the names of the Assistant State Veterinarians resigned for publication, and that a copy of the paper be mailed to each veterinarian in the State. Carried.

The next order of business was the reading of papers. Dr. Henderson was called on for his paper, "Meat and Milk Inspection in Chicago and the Efficiency of the Present Layman Inspectors." The doctor presented extracts from the present uninforced laws, and also stated the stringent laws now in force in Minneapolis. The article was a most excellent one and complete in all its departments.

Dr. Robertson presented a paper relating to the law governing veterinary work in the police department. This also was an excellent statement of present facts.

Dr. P. Quitman was unable to make any report in regard to the connection of a veterinarian with the fire department. Quite a long debate was held by the members as to draughting a bill for passage by the City Council to place veterinarians as assistants in the City Health Department. Moved by Dr. Fish, seconded by Dr. Campbell, that the Legislative Committee call on the Corporation Counsel or elsewhere and arcertain what the chances are to create a veterinary department in connection with the Health Department. Carried.

Moved and seconded to close discussion. Carried.

On application and examination by the Board of Censors, Dr. W. H. McEvers was admitted to membership.

The hour being midnight, it was moved and seconded to adjourn. LAWRENCE CAMPBELL, *Secretary.*

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The regular meeting of the Veterinary Medical Association of New York County was held at its rooms in the Academy of Medicine, Wednesday evening, June 2. In the absence of the President and Vice-President, Dr. J. S. Cattanach officiated, at the request of the Secretary.

On roll-call, the following members responded: Drs. Bretherton, C. C. Cattanach, J. S. Cattanach, Ellis, Farley, Loomes, Lamkin, MacKellar, Murphy, O'Shea and Ryder.

Judiciary Committee:—Dr. O'Shea (Chairman) reported that, although the Jury bill was defeated again this year, he is informed that it would be the first exemption bill that would be obtained in this State. The doctor also stated that it was through the efforts of some of the members of this committee that Assembly Bill No. 25, to enable Charles McCormick, of the city and county of Albany, to practice veterinary medicine and surgery as a profession was defeated in the Senate, despite the fact that it had passed the Assembly, after being opposed by members of the profession throughout the State. Moved and seconded that the report be accepted. Carried.

The remainder of the evening was given up to reports of cases by the members, which became very interesting.

Dr. C. C. Cattanach reported a case of lockjaw, and Dr. Lamkin several cow cases, all of which were freely discussed.

The subject of "castration standing," which had been discussed at the May meeting with much interest, was revived and discussed at this meeting.

Moved and seconded, that the meeting adjourn, to meet again in October. Carried. ROBT. W. ELLIS, D.V.S., *Sec'y.*

VETERINARY SOCIETY OF NEW JERSEY AND VICINITY.

The regular monthly meeting was held at Dr. Sattler's hospital in Newark, on Tuesday, June 8, and was called to order at 4 P. M., President Sattler in the chair. At the roll-call the following members responded:—Drs. Sattler, Ogden, Smith, Ancker, Knott and Buckley.

The minutes of the previous meeting were read and approved.

Reports of the Secretary and Treasurer were next in order, which were read and adopted.

Place of meeting being next in order, it was moved and seconded that the next meeting be held at the residence of Dr. Ogden in Orange, N. J.

Discussions and reports from practice were next in order. Dr. Ancker reported a case of tetanus, with complete trismus. Twelve grams of Gibier's Antitetanine were given in six doses in 48 hours, with 50 grams chloral hydrate in solution per rectum. The animal made a complete recovery. The trismus disappeared within the 48 hours.

In discussing laminitis, Dr. Ancker gave his treatment in a recent case as follows:—Eight decigrammes pilocarpine in twenty-four hours in three doses; also salicylate of soda, 60 grams in 24 hours. In three days the animal was able to move around.

In discussing the treatment of worms in the horse, Dr. Sattler recommended the following:

℞	Acid. arseniosi alb.,	1.0
	Tartar stib.,	20 0
	Pulv. aloes,	āā
	Pulv. altha.,	30.0

M. fiat pil. No. ii. Sig. Give one at once. Repeat in twelve hours

SATTLER

Dr. Sattler promised to prepare a paper on rheumatic endocarditis at the next meeting. E. BUCKLEY, *Sec'y.*

NEWS AND ITEMS.

COLORADO HORSE-SHOERS.—It is now a law in Colorado that horse-shoers shall pass an examination as to qualification.

THE QUEEN OF ENGLAND had eight cream-colored horses attached to her carriage of state on the occasion of the celebration of her diamond jubilee in London.

DR. E. B. ACKERMAN, of Brooklyn, has leased the model sanitarium at 358 South Second Street, Brooklyn, from the estate of the late Lucian T. Bell, M. D., V. S.

DR. WM. HERBERT LOWE was reëlected to the office of City Veterinary Surgeon of the City of Paterson, N. J., by the unanimous vote of the Board of Aldermen held May 24th, 1897.

LAWSON N. FULLER, the veteran New York reinsman, drove eight trotting horses a mile in 3:18 1-4 on June 19th. As soon as he has handled them a little more he intends to attempt to beat 3:00 with them.

DR. J. B. PAIGE, of the Massachusetts Agricultural College, Amherst, Mass., has forwarded to the REVIEW a copy of the March, 1895, issue, which Dr. L. D. Legear, of Austin, Texas, has been advertising for recently, with his compliments.

DR. ROBERT G. WALKER, President of the Chicago Veterinary Society, has an open letter to Governor Tanner in the *Daily Inter-Ocean* of May 24th in reference to the latter's obnoxious appointment of a quack to the position of State Veterinarian.

THE VIRGINIA STATE BOARD OF VETERINARY EXAMINERS held a session at Richmond on June 23d and 24th, at which two applicants successfully passed the examination. One was a colored graduate of the Veterinary Department of the University of Pennsylvania.

DR. JOSEPH PLASKETT, of Nashville, Tenn., Secretary of the Tennessee Veterinary Medical Association, writes: "We are progressing favorably with the arrangements for the meeting of the U.S.V.M.A., and from present indications we are going to have a large and successful meeting."

A BROOKLYN (N. Y.) HORSE which had been affected with stringhalt of both hind legs for several years—gradually growing so bad as to unfit him for further work—has almost entirely recovered aftter six months' rest, and has resumed his accustomed duties without a return of the trouble.

BELGIUM is the latest European country to seek army horses in the United States. The army officials of that country have applied to our Agricultural and War Departments for information for their guidance, and they have been recommended to seek their remounts in Kentucky and Missouri.

TESTED CATTLE ONLY TO ENTER PENNSYLVANIA.—After January 1, 1898, all cattle entering Pennsylvania for the purpose of replenishing dairy herds must have been subjected to the tuberculin test and pronounced free from tuberculosis or remain at the point of entry sufficiently long to be tested.

DR. C. J. SIHLER, recently in charge of government meat inspection at Kansas City, has been placed in charge of the experiment to eradicate hog cholera and swine plague to be conducted by the Bureau of Animal Industry in Hickman County, Tennessee. Dr. E. S. Bennett, of Milwaukee, succeeds Dr. Sihler at Kansas City.

THE SUPREME COURT OF CONNECTICUT has decided that in a suit for the purchase price of a horse it is proper to introduce evidence to prove that unsoundness existed at the time of the examination, made after purchase, by a veterinarian; and to show by expert testimony that the character of the unsoundness was such that it existed at the time of the sale.

FUMES OF CALOMEL IN LARYNGITIS.—Herbert Neher, D. V. S., New York City, under date of June 20th, writes the REVIEW as follows: "I have been experimenting with calomel fumes in cases of laryngitis and strangles, when the breathing has become difficult and painful. My plan is to take an alcohol lamp and place a tin disc, five or six inches in diameter, over the flame; then sprinkle calomel on the hot disc and hold in a position so that the fumes can be inhaled by the animal. This seems to give almost immediate relief and I imagine has saved me the operation of tracheotomy in several instances. I would suggest its use, and will be pleased to hear any reports in regard to it by the profession."

NEW YORK LEGISLATION.—During the last session of the legislature many bills were introduced bearing upon the practice of veterinary medicine. Some were wise, more were decidedly otherwise. If the securing of any depended upon the success of all, we have much to be thankful for that none became laws. If we are wise, we will discuss these matters at the next meeting of the State Society, and become so well organized in our Legislative Committee that we will be able to point out to the lawmakers those which the profession needs and those which its enemies want. Nothing but praise can be given to the present legislative committee, but the profession of the State could more solidly support them by using individual influence with their representatives.

WHAT IT WOULD COST TO REMOVE TUBERCULOSIS FROM THE UNITED STATES.—The Agricultural Experiment Station at the University of Minnesota has recently issued Bulletin No. 51, which is a report of the Veterinary Division on Bovine Tuberculosis, the author being Dr. M. H. Reynolds, the well-known veterinarian, recently appointed State Veterinarian of Minnesota, who has devoted a great deal of study to this very absorbing question. The following interesting estimate is found in his report: "In 1893 there were in the United States 16,424,000 milk cows, and 35,954,000 other cattle—making a total of 52,378,000, and valued at $905,520,000. Suppose that 4 per cent. of these cattle are tuberculous and are to be condemned. This would amount to $36,220,800. It would require 422 barrels of tuberculin to give all these animals one test each. Suppose each veterinarian is at liberty to work 150 days in the year and is paid $10 per day for services. This would be $1500 per year for each veterinarian doing the work. Each man can test 105 cattle per week. There would be required the services of 34,919 veterinarians, or an average of 794 veterinarians in each state. Minnesota has at a large estimate 150 competent to do the work. Besides this there are not Kochs and Schweinitzs enough to manufacture the tuberculin as it would be needed."

SPOILS SYSTEM IN TENNESSEE.—Political appointments to professional positions seem to be infectious. We had scarcely recovered from our surprise and dismay at the outrages in Illinois, in the total disregard by the Governor of that State and the Mayor of the city of Chicago of the demands of the profession and of the welfare of the people, as well as common decency, in the appointment to offices of importance of men who are absolutely unqualified by education to fill them, when a similar state of affairs is brought to our notice as occurring in Tennessee, a state which the United States Veterinary Medical Association has honored by selecting her chief city as the point at which the convention of 1897 is to be held, and thus make the innovation of holding her first meeting in a real southern state. In a competition for the position of meat inspector for Nashville there were three applicants—two graduated veterinarians and one quack, who is described by a correspondent as being in every way unfitted for the position, but that, despite the protests of the united medical profession, his pull prevailed. The appointive power was the local board of health, consisting of the mayor, the city health officer, and one of the city fathers. This simply illustrates the need of the august presence of the U.S.V.M.A. in that city this fall to show the people what manner of man the educated veterinarian is in comparison to the charlatans whom they are encouraging because of their capacity to wield the franchise as against efficiency and honesty.

ENCOURAGING THE SPREAD OF RABIES.—In the large cities of New York State, like New York and Brooklyn, the American Society for the Prevention of Cruelty to Animals has by act of the legislature secured additional powers, whereby it has been designated as the official collector of unlicensed, stray, or disabled and abandoned animals; it is the power which grants licenses and collects fees therefor; it has established shelters, at which points all those animals gathered in are placed until such time as the legal requirements are fulfilled. They are kept for forty-eight hours, at the expiration of which, if they have not been claimed by an owner, who can secure their release by the payment of three dollars ($2 being for a license and $1 for pound charges) they may be disposed of to any one wishing to buy them, the uniform charge being $3, or put to death by an approved method. This new system has proven a great improvement over the old method of dog-catching by outlaws of the lowest order; it insures honorable treatment of the public and humanity to the dumb beast. Every animal bearing the Society's license is recorded, and if such an animal is found astray the owner is notified, and can secure his return without additional cost. It more than pays an owner, then, for the safeguard it throws around his pet or companion. But it brings together a great conglomeration of all manner of dogs—from the lost toy terrier that has wandered from its owner to the tramp dog that has never known a home; it is a breeder of every contagious disease known to canine medicine; and, as has recently transpired in Brooklyn, a case of rabies is directly traceable to the shelter. A gentleman having a little child sought to secure it a playmate, and bought from the shelter a young collie dog. At the end of a week he bit the child in the face, and in a few days gave pathognomonic symptoms of dumb rabies. At this writing the child is being treated at the Pasteur Institute in New York City. It appears to us that any animal not claimed by an owner should be put to death, as they have been exposed to too much danger to form a proper companion of human beings. When placed in the shelter fifteen or twenty dogs of all kinds are crowded into one large box-stall, and should only one be in the mildest stage of rabies he may inoculate the whole lot, to in time be as many sources of danger.

A VETERINARY PRACTICE FOR SALE.

The best chance ever offered for a good, enterprising Veterinary Surgeon, in the best Summer resort in the United States; the population is over 20,000; the surrounding country is of the very best. No other qualified Veterinary Surgeon within 20 miles. Hospital, with all modern improvements, 13 stalls, office and medicine rooms the finest in the State, and all complete. Hospital is within 300 yards of race-track, of 1,000 stalls; in racing season stalls are all occupied and a number of the race-horses winter here, making it an all-the-year-round business.

My books will show that I have done over $50,000 worth of business in six years. The very best reason for offering for sale will be given. I keep five horses in my practice. I own everything about the place. I will sell practice and lease the property, consisting of the described Hospital and a dwelling house of ten rooms, all newly furnished, and latest improved house, or I will sell the property and everything complete on very easy terms. Very little money will be needed. Any good man that would like the above described business, I would be pleased to have come and make me a visit for a week or ten days and look the prospects over and see for themselves. Address T. C. S., care *American Veterinary Review*, 141 West 54th St., New York City.

FOR SALE—A HORSE AMBULANCE.

A splendid horse AMBULANCE complete in every respect. Elegantly ornamented with brass railing, brass lamps, etc. Painting the work of an artist. Makes a finer appearance on the street than a fire engine. Equipped fully with ropes, chains, hobbles, windlass, cranks, etc. The portable bottom is on 18 rollers which can be moved anywhere, and the completely disabled animal secured on it and drawn into the ambulance with the windlass. A horse using three legs only can walk into it. The ambulance is lined inside with steel and the whole is built to last forever.

Veterinarians from many different places say it is the finest and best they ever saw. Continued illness the only reason for selling.

Harness ornamented to match the ambulance.

Address "AMBULANCE," care of AMERICAN VETERINARY REVIEW, 141 W. 54th Street, New York City.

AMERICAN VETERINARY REVIEW.

AUGUST, 1897.

EDITORIAL.

AMPUTATION OF THE HORSE'S TAIL FOR FASHION'S SAKE.

We are informed by a paragraph going the rounds of the sporting and agricultural press that the Lancashire (England) Veterinary Medical Association has passed a resolution giving it as the sense of that organization that the docking of horses is a necessary operation. Taking that resolution literally, and for the meaning that its frequent quotation is intended to convey, we can arrive at no other conclusion than that the members present at the meeting at which the resolution was adopted were of the opinion that the removal of a healthy horse's healthy tail is a necessity. Not having read the discussion which led intelligent, scientific veterinarians to record their votes in favor of such an absurd and inhumane resolution, we are loth to indulge in harsh criticism of our fellow-veterinarians; but we are very anxious, for the good name of our beloved profession, that the association which is thus apparently maligned shall start a counter-paragraph that shall more vigorously and emphatically deny the truth or authenticity of the allegations than it has been promulgated through the press. It does not affect the question one iota to explain the resolution as meaning that the demands of the public are so strenuous that they are irresistible and are such as virtually to compel a veterinarian to perform this operation, because it strikes an owner's fancy to have his horse's graceful caudal appendage abbreviated. Nor for the reason that men outside of the profession so successfully execute the amputation as to make it a question of the veterinarian's losing the glittering gold that flows from such practices. These considerations do not justify an association of scientific gentlemen in making an official declaration that a practice that is acknowledged by all men—professional and lay—to be brutal, is "a necessary operation." He who has sworn to the Oath of Hippocrates, to be merciful and just and considerate to the dumb creatures over whose health and happiness he is to minister and encourage, could not conscientiously vote in favor of such an unreasonable proposition. Probably no veterinarian with experience would claim that the simple processes of amputation, cauterization, and cicatrization are fraught with such a magnitude of suffering, nor that the complications are so frequent, nor the sequellæ so serious, as to place it beyond the pale of professional procedure; but the consequences are of a different kind; they entail suffering by reason of the absence of the horse's natural defense against torturing insects. As long as the horse remains sound and satisfactory, his sufferings may not be great, for his master will probably provide him with a fly-net when at labor and a sheet when at rest and in the stable. But when, from disability or other cause, he is no longer his owner's pride, becoming the subject of barter, finding his way into the second-hand dealer's stable and finally into the shafts of the fish-peddler's wagon, he may then yearn for the release that death brings, as did the hero of the late lamented Prof. Walley's pathetic poem, "The Horse's Troublous Life." It is not necessary here to depict his agonizing efforts to defend himself against the pests that Nature intended his beautiful tail should shield him from; they are too well known to us. That resolution, if it exists in reality, is a blot upon the name of the profession of veterinary medicine, and should be expunged as quickly and as vigorously as possible.

. . . .

Since the foregoing was in type, we have received the English professional periodicals, in which are printed in full the proceedings of the special meeting of the Lancashire Association, at which the resolution referred to was *unanimously* adopted, about twenty members being present, and nothing is left for the imagination; the arguments in favor of it—weak as they are—are there given. We can only say that such a resolution would never receive the endorsement of an American association, and we do not believe that any other body of veterinarians will follow the miserable example set by the Lancashiremen.

THE REVIVAL OF THE HORSE INDUSTRY.

A careful perusal of the journals representing the horse-breeding interests of the United States reveals some highly interesting news in regard to the changes that are quietly taking place in the breeding and marketing of the horse. The ruthless killing of the western ranch horses, which have become worthless on account of lack of size, strength and docility, and the impossibility of selling light buggy-horses of questionable trotting stock are gradually impressing the horse-breeders that the marketable horse of the future must be an animal of quality as regards conformation, color and training. There has arisen a sudden demand for stallions and mares of the different coach breeds, especially for hackneys, French-coachers and German-coachers, and those breeders who have been saving their stock through the period of depression are selling at long prices. A peculiarity of the horse market during the season just closed has been the unprecedented sale of thoroughbreds, large numbers of them having been purchased for export trade to England, France and Germany. We give below a few extracts from the last number issued of the *Horseman*, which are quite interesting:

PASSING OF THE OREGON HORSE.—The large abattoir constructed at Portland, Oregon, a few years ago for the purpose of converting the numberless range horses of the Pacific northwest into meat, glue, fertilizers, etc., has been closed down for several months, and in spite of the fact that many thousand horses were secured at about $2 per head, the scheme is reported to have been a losing one for the projectors. It had one good effect, though, for in the few months it was in operation it reduced the cayuse horse supply to the extent of about 12,000 head. When this enterprise was started the owners of the vast herds of semi-wild horses which roamed the Oregon plains hailed it as a sort of a "last ditch" proposition, and now that even this opportunity for ridding themselves of the animals has vanished, they know not which way to turn, and the horses have become so worthless that they can be purchased in any number wanted at from 50 cents to $2 per head, and they are regarded in much the same light as wild animals which deprive valuable sheep and cattle of rich grazing needed by them. However, crowding him off the good grazing grounds of the earth and making him a target for the rifles of the sheep herder and the cowboy, and like his fellow nomad, the American Indian, the diseases of civilization are also helping to decimate his ranks. Last fall the Deputy State Stock Inspector in Umatilla County killed several hundred horses affected with mange, on the Umatilla Indian reservation. It was thought that the disease was pretty well stamped out, but within the past few weeks a large number of afflicted horses have come down from the mountains and the disease is again spreading on the reservation, necessitating another wholesale killing.

WANTED—LARGE NUMBERS OF DRAFT-HORSES.—A dealer in Maine advertises that he has contracted for the purchase of one thousand head of sound, good, useful western workers, and will import them into that State at the rate of four carloads each week, two loads each Tuesday and two loads each Friday. He says that he will also have on sale at all times during the season one hundred head of big, strong horses for the lumber and heavy hauling trades. This is a most interesting announcement. Here is just one of many dealers in horses doing business in Maine. He must go westward, as far as Buffalo, at least, and buy 1000 head of western horses in order to supply the demands of the farmers and other horse users in the territory in which he operates. Have the Maine breeders not been raising any horses lately, or what is the matter? If only a few horses were needed in the Pine Tree State it would not be so curious, but when it comes to the dealers having to buy their stock 1000 at a time it looks as though the promised horse famine is closer at hand than was expected some time ago.

SALES OF THOROUGHBRED YEARLINGS.—This year men seem to be willing to pay more for thoroughbred yearlings than they have been for seasons past. The Rancho del Paso colts and fillies sold very well, the get of the English horse Goldfinch selling to the best advantage. Mr. Daly invariably pays the biggest prices going at the Haggin sales of yearlings. When thoroughbred yearlings sell for eight thousand dollars, five thousand dollars and so on, it means that times have changed. The full brother to Ornament brought over ten thousand dollars, the full brother to Henry of Navarre brought over twenty-five hundred dollars, and altogether the sales have, as a rule, been most satisfactory. Even at Sheffield, Ind., the five sons of the mighty Kingston brought an average of over nine hundred dollars each, M. F. Dwyer having a commissioner on the ground to buy the sons of the great horse. At St. Louis the prices obtained were also good.

THOROUGHBREDS FOR FRANCE.—Within the past few weeks an agent of the French government has purchased at and around the Forsyth track some fifty-five thoroughbreds, the price paid being, on an average, one hundred and twenty-five dollars per head. As far as can be learned the horses are being purchased for use in the French cavalry and artillery service, not for breeding purposes, and thereby hangs somewhat of a mystery. Hitherto it has been supposed that for active military service the thoroughbred lacked weight-carrying ability, and that the half-bred horses were superior in this respect. It has all along been conceded that some thoroughblood was absolutely necessary in an army horse of high class, and in truth thoroughbreds are used in all the old world nations for begetting cavalry and artillery horses, but it must be an extraordinary condition that prompts the French government to dispatch to America an emissary with an order for some two thousand thoroughbreds valued at only one hundred and twenty-five dollars. Thoroughbreds that can be bought for that price are not as a rule worth much for racing purposes, so it is no wonder that the quest of the French commissioner has given rise to much curiosity.

In regard to this last item we may remark that there is nothing mysterious about it. The light cavalry of the French, German and other Continental armies have mounted a large number of their officers on thoroughbreds, because for reconnoitering purposes they surpass any other horse in swiftness. As long as sound thoroughbreds can be purchased from us at such a low figure, these horses will be readily purchased from abroad for these purposes, although, we believe, that all the mares will go to the studs.

These reports, together with the call for cavalry horses from Belgium, and the exportation of thoroughbreds and half-breeds for the Japan army from Seattle, Washington, may justly give the American horse-breeder a pointer not to exclusively engage in the business of breeding heavy coachers and roadsters, but that he may with profit pay special attention to the breeding of a well-shaped, middle-priced saddle-horse, for which there is such a great demand from the armies the world over. Yet, as we have no stallions nor mares of an established army type and as we have an abundance of coach-types, we should import some of them, selected by expert veterinarians, to have a nucleus to start from in the breeding of these horses.

ARE THE APPOINTMENTS OF QUACKS INFECTIOUS?

When the Governor of Illinois so far disregarded the demands of the legitimate veterinary profession of that State as to appoint to the high office of State Veterinarian a man deficient in every qualification to fill the position—a man without scientific training and education and avowedly opposed to higher education—notwithstanding the fact that he had been made conversant with these points, it was supposed that the acme of political contempt for the public welfare and common decency had been reached, and that the righteous indignation manifested by the profession of that State and elsewhere would be a sufficient safeguard against the repetition of such an atrocious occurrence for some time at least. The REVIEW denounced the monstrous outrage in unmeasured terms, and spurred on the veterinarians of Illinois to rebuke the high-handed action of the politicians by every means in their power. In the very next issue (July) we were again called upon to chronicle the appointment by the local Board of Health of Nashville, Tenn., of a non-graduate to the office of Meat Inspector of that city, notwithstanding that his two competitors for the position were graduates in veterinary medicine. Now, for the third consecutive issue of the REVIEW, we record a similar act in the State of Michigan, where so eminent a member of our profession as Prof. E. A. A. Grange, a man who has been long tried, and who is regarded by his fellow-veterinarians throughout the country as an earnest, brilliant and distinguished scientist, has been displaced in the important and responsible post of State Veterinarian to make room for a non-graduate.

What is the cause of this infectious outbreak of political quackery? Is it due to lack of organization among veterinarians? Is it that the graduated veterinarian is not enough of a politician? Or what is the matter?

And what is the remedy?

The answer to the last interrogation is more easily given than the preceding ones. The profession in States where professional offices are filled by political preferment must strike at the root of the evil. It will do no good to wage perpetual war against the appointive power for doing an act which the law permits him to do. As scientific men, as dignified professional gentlemen, we cannot afford to enter a scramble for such positions with political heelers, who are making capital out of the very prominence which our protests are bringing them. It is a blot upon our form of government that such offices are the subject of reward for ante-election services, and the remedy lies in their elimination from that category.

The law is at fault: the veterinarians must have it changed. Place all such positions in the competitive list, where none are eligible except those holding diplomas from recognized veterinary colleges or universities. Do our scrambling before the legislative committees, unitedly, determinedly, relentlessly, and the righteousness of the cause will be irresistible.

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

Nothing, it would seem, is now lacking to make the thirty-fourth annual meeting of the National Association a record-breaker in interest, profit, attendance and social pleasure. If there is a disposition to doubt this statement, a reference to the news columns of this issue of the REVIEW should be sufficient to dispel such fears, for certainly the intellectual programme is full to overflowing with subjects that appeal to every phase of our profession; the outline of the arrangements made by the local committee for the social delectation of the guests is sufficient to make one yearn for the rapid approach of the days when they may be embraced, while the transportation companies have made the cost of the trip from all points at the minimum, largely due to the low rates existing to the great exposition now in progress in the convention city. We have been exhorting our brethren for the past two or three months to "Get ready for Nashville," and, sounding the same call again, we feel sure that those who can avail themselves of the opportunity to learn much, see much, and enjoy much, will never regret the time taken for the duty and the diversion.

STATE BOARDS OF VETERINARY EXAMINERS.

In all probability there will be present at the thirty-fourth annual meeting of the United States Veterinary Medical Association, which convenes in Nashville, Tenn., September 7th, 8th, and 9th, one or more representatives of every veterinary medical examining board in the United States. During the session of the association there will occur the fourth annual meeting of the Association of Veterinary Faculties of North America. At the last meeting of the latter organization earnest discussion of the subject of reciprocity between the various State boards of examiners was indulged in, resulting in the appointment of a committee to further such ends. Since then the REVIEW (the editors of which constitute one of the committee) has agitated the matter in two of its issues, and has done what it could to keep the question alive before the profession. It now offers this suggestion to the Association of Faculties: Would it not be well, and in furtherance of the desired object, to invite all representatives of such boards to attend the meeting of the Faculties during the discussion of the subject of uniformity and recognition between the boards of the different states, so that views might be intermingled and something tangible and practical arrived at, whereby reciprocity could be secured in reality as well as in theory?

IF forced to remain away from Nashville, you will find a full account of the meeting in the October REVIEW.

ORIGINAL ARTICLES.

[Written Specially for the American Veterinary Review.]

INFECTIOUS ABORTION OF MARES.

By W. L. Williams, V. S., Professor of Surgery, etc., at N. Y. State Veterinary College, Ithaca, N. Y.

Infectious abortion as a distinct, specific malady has long been recognized among domesticated animals, and, distinguished from general transmissable diseases which in the course of their attack may induce abortion of the pregnant females, as seen in hog cholera affecting pregnant sows, or the so-called "pink-eye" or epizootic (infectious) cellulitis of mares; as well as the sometimes wholesale abortions reported from ergotized or other deleterious foods.

A brief *résumé* of the literature upon the subject, as relating to the affection in mares, is given in connection with the records of some experimental work conducted by us, in the sixth and seventh annual reports of the Bureau of Animal Industry, Department of Agriculture, p. 449.

It is desired here to briefly record some observations made upon the control of the disease when once existing in a herd of pregnant mares. These observations were made in a herd of standard trotting and thoroughbred mares, the property of Mr. H., Bozeman, Mont.

In all, Mr. H. had, in November, 1895, twenty-five mares presumably pregnant. None of them worked except one grade draft mare, and all having apparently faultless care as to freedom, housing, feed and water. The first animal to abort was the grade draft mare used for general farm work, the abortion occurring in November, 1895, followed by somewhat widely separated abortions of three trotting mares, which led to our being consulted early in 1896, after which a close watch was kept, and on February 7th we were called to attend a young trotting mare which had apparently been in labor for some twelve to eighteen hours; the fœtal membranes, considerably decomposed and discolored, were hanging from the vulva. The fœtus was found in a false position, which was readily corrected and the mare easily delivered. The fœtus was hairless, apparently of about eight months gestation. The afterbirth was removed, the uterus irrigated with carbolized water, and the patient comfortably housed. She apparently was doing well, ate moderately, and seemed safely on the road to recovery, until on the morning of the 9th she was found dead in her stall. Autopsy revealed all organs except the generative apparently healthy. The uterus was enlarged, swollen and contained a large amount of a dirty, fœtid, watery excretion, while in the os and vagina were large masses of tough, fœtid, dirty, yellowish, croupous exudate.

During the ineffectual labor of the patient she was in company with some fifteen other pregnant mares. These were promptly removed to new quarters, and each mare received a vaginal injection of a solution of corrosive sublimate, 1-1000, to be followed daily with a sponging of the vulva, tail and surrounding parts with the same solution.

During the nights of February 26, 27 and 28 each, a mare aborted without having presented any signs of approaching trouble when left for the night, and the first intimation of the loss was the finding of the dead fœtuses in the stalls on the following mornings, the mares in each case being apparently well. The aborted mares were promptly removed to other premises, the fœtuses and membranes safely disposed of, the bedding cleared away and burned, the stalls fumigated by burning sulphur, and closed against other animals, and the spongings of the vulva and tail of the remaining pregnant mares renewed and carried out twice daily.

A few days later another mare, not known to have been in contact with those which had aborted, required aid in expelling a dead fœtus, and although carefully watched, developed severe metritis after forty-eight hours, which yielded to treatment.

The abortions ceased at this point, and in the course of a few weeks healthy foals were dropped as the remaining pregnant mares completed their periods of gestation.

The history of the outbreak, coupled with the symptoms, served to quite fully confirm the suspicion of infectious abortion.

The results of the antiseptic treatment point strongly to the belief held by most observers that the disease is essentially one of the fœtal membranes and fœtus, gaining access to these through the vulva and vagina, and serve to confirm results of a similar treatment carried out by several investigators in infectious abortions of cows and ewes. Although several mares aborted after the treatment had been applied, it is quite safe to assume that the infecting agent had already gained access to the fœtal membranes before the application of the treatment, which could not then be of any possible avail.

The disease having apparently ceased, Mr. H. again bred a part of his mares, and on December 29, 1896, reported that he had ten healthy foals of the previous spring, and that all mares bred seemed safely in foal, no abortions having occurred so far as discovered since those above recorded.

The origin of the affection in the herd of Mr. H. could not be clearly traced, but the malady seemed to be prevalent to some degree among mares on neighboring farms.

Mr. H. had on his premises also several mares which had come from the herd of Mr. D., where the disease had raged to such an extent, in the summer of 1891, that practically all mares aborted.

In view of the success recorded by various observers with the plan of treatment here outlined and the confirmatory observations in this outbreak, it appears that when the disease exists among animals of sufficient value, its control and eradication may be undertaken with reasonable hope of success.

THE VETERINARY JOURNAL (England) for July has a 32-page article by James Hunter, F. R. C. S., F. R. S. E., on "Sporadic Pneumonia in Cattle," it being called forth by Dr. Theobald Smith's contribution to the recently issued report of the Bureau of Animal Industry.

ACUTE LAMINITIS.

By B. L. Clark, M. D. C., Monticello, Wis.

A Paper read before the Wisconsin Association of Veterinary Graduates.

The subject which I have chosen is that of acute laminitis, or inflammation of the sensitive laminæ of the foot. I do not expect to present anything new, owing to the fact that this disease has been so thoroughly investigated and discussed in our works on veterinary pathology; but simply to refresh the subject in your minds. This disease is quite common among horses, and is frequently seen in cattle. It is the most dreaded disease to which the horse is liable. It is not confined to the feet alone, although its chief seat is there. It has a variety of causes, as over-exertion, errors in feeding, drinking cold water when heated, standing in a constrained position for a long time, a sudden chill, or indigestion. The last cause, in my opinion, is the most common. It frequently arises from other diseases, or, rather, is a complication of such diseases as pneumonia, enteritis, or bronchitis, where the whole surface of the body is affected, as seen in cases where the hair of the mane and tail falls out. The tendency of this disease is to throw off the hoof, as indicated by the rings on the external surface of the hoof wall. It occasionally arises from over-exertion and concussion, exemplified in cases where horses are run against time, but it is much more frequent where the mucous membrane is affected. In cases of concussion the pedal bone is involved, and results in ostitis, and sometimes necrosis and sloughing of the hoof, terminating in an agonizing death. The symptoms of both forms are almost identical.

Pathology.—Inflammation of the sensitive foot includes the laminæ, sole and os pedes, resulting in an exudation, which is greatest at the toe, the tissues being more vascular at that part. The pain is most agonizing and persistent, owing to the fact that the foot is enclosed in an unyielding horny box, the blood-vessels being engorged and having no chance to swell or expand. Pressure upon the anterior part of the pedal bone has a tendency to force it downward, and separate it from the wall.

As a result of the inflammation there is an exudation thrown out at this point, which is of a dirty reddish color ; this fills the canals and lacunæ of the pedal bone, forming a barrier to the circulation of the blood, thus hastening the process of necrosis and decay. Should the inflammation persist, the exudation accumulates at the toe, separating the horny and the sensitive laminæ. As a result of this the anterior part of the os pedis is forced downward, producing a convex condition of the sole, while the secreting power of the sole is arrested or prevented, and the horny sole becomes weak and spongy, affording very little protection to the sensitive parts within. The outer horn of the wall, or that secreted by the coronary band, now presents a ribbed appearance, as if attempts had been made to cast off the hoof. These rings are irregular and run together at the anterior part of the hoof. Prof. Williams says that occasionally we have suppuration at the coronet and sometimes at the sole, detaching the sensitive from the horny sole.

Laminitis produced by concussion is usually confined to the front feet. Many writers state that affections of serous membranes, such as the pleura, frequently terminate by metastasis in laminitis. But I am of the opinion that when the sensitive laminæ become involved during the progress of some other disease, it is always the mucous membrane that is affected, owing to the fact, above mentioned, that as the skin is continuous with the mucous membrane, it is also involved, and in this way extends to the feet. The skin being affected is somewhat congested and will naturally involve all of its appendages.

The circulation of the feet being restricted within an unyielding space, the walls being unable to expand, it produces the intense pains by the engorged blood vessels pressing upon the nerves. We also have a fair example of their relation in cutaneous eruptions from indigestion, catarrh, etc. The irritation may be very slight, scarcely observable, but the irritation of the folds of the sensitive laminæ in the foot surrounded by its unyielding case causes the acute symptoms.

Acute laminitis may terminate in resolution of the parts, suppuration, gangrene and sub-acute or chronic laminitis. The chronic form of the disease is seen when the acute has partly subsided and the symptoms somewhat abated. Horses suffering with chronic laminitis are predisposed to the acute form. The pathological changes of the chronic are the descent of the os pedis, thus causing a convex, weak sole, and a great horny growth at the toe.

Causes.—Indigestion, concussion, bad-shoeing, hereditary tendency, and defective conformation. It is said by some that horses with wide feet are more liable to the disease, but it is the general opinion that horses with moderately small feet, and weighing about twelve to thirteen hundred pounds are most often affected. The exciting causes are: over-exertion, concussion, and indigestion when caused by engorged stomach. The disease is generally confined to the front feet, especially when caused by concussion. But when caused by indigestion it may affect the hind feet only, or all four of the feet.

Symptoms.—The horse is exceptionally lame and almost immovable; especially at starting, the whole body seems to be cramped. He stands with hind feet well under the body, and front ones advanced to relieve them from the weight as much as possible. If all four feet are affected he will put them nearly together, sway backwards and forwards, and from side to side in order to get the weight on the heels as much as possible, the toes being elevated from the ground. If compelled to move he elevates his feet with difficulty; he will often groan with pain and sweat freely in patches, while the remainder of the surface of the skin will be hot and dry. Temperature from 102° to 105° F., pulse full, hard and increased in frequency, the general symptoms are those of agonizing pain. Appetite is somewhat impaired and thirst generally increased. They generally maintain the standing position, but when they do lie down they often remain for some time and seem to be relieved. Cases of suppuration and gangrene are not very frequent owing to the anatomical structure of the veins of the foot. The feet will be found to be hot to the touch, and when tapped with the hammer the animal will show signs of pain. The pulse at the digital artery will be found full and throbbing. The respirations accelerated, the mouth hot and dry, the fæces dry and coated, urine scanty and high colored. The symptoms vary with the feet that are affected. When the front feet are affected, which is most frequently the case, they are advanced forward and the hind feet are carried well under the body to relieve them of their load. But when the hind feet only are involved the animal will often lie down. It may be most marked on one foot, but this is generally due to some local lesion.

In the ox it is more serious in the inner claw on account of it bearing the most weight. He walks with difficulty, and takes advantage of every opportunity to lie down. The fever is severe, and sometimes there is loss of appetite and rumination.

Termination of the Acute Form.—Well treated laminitis is of short duration, and terminates in a short time in resolution. If it runs for a longer period than eight to twelve days, chronic laminitis will probably result. Resolution in the acute form is accomplished when the inflammation is quickly subdued and the products are absorbed; when thus ending the horn secreting structures of the foot is not often altered.

Complications and Terminations.—Hæmorrhage, inflammation with exudation, suppuration, gangrene, and lastly chronic laminitis. Hæmorrhage is that condition when rupture of the capillaries have taken place, thereby infiltrating between the two laminæ and sometimes oozing out at the coronet. If oozing has taken place it is advisable to cut in at the toe, at the junction of the wall and sole, thus relieving the pressure. Inflammation is the result of congestion if not relieved, and as a natural consequence we have exudation. This exudation being thrown out from the sensitive lamina, separating the sensitive from the horny, thus pushing the pedal bone downward, and the wall upward, thereby forming a condition known as chronic laminitis. Suppuration is more rare, and is only seen in the traumatic form. It generally attacks the sensitive sole, and occasionally works its way to the coronet. This is a very painful complication. Relief may be obtained by making an opening at the toe, but sloughing and dropping off of the entire hoof is occasionally seen. Gangrene of the sub-horny tissue sometimes takes place, though seldom under the influence of excessive pressure, especially when there is a sub-horny exudation. When this sets in the violent pains suddenly cease, resting is more solid, and he moves without difficulty ; but at the same time the countenance is anxious and contracted, the pulse becomes small and difficult to count, the temperature diminishes, and the animal has an unsteady gait, is indifferent to excitement, and soon he dies from septic infection. Chronic laminitis is that condition of the foot when resolution has not taken place in ten to fifteen days.

Treatment.—Give a mild purgative (aloes, I think, is best) ; follow with febrifuges ; aconite (the tincture or fluid extract), if the fever is high, may be given every two hours. Also give potassium nitrate, as it seems to produce good results in this disease. Remove the shoes and stand the horse with affected feet in hot water as deep as the pastern joint, and let him remain there for thirty to forty minutes. Then remove and apply hot soft linseed meal poultices. Repeat the bathing two or three times a day, and each time apply a fresh poultice. At the end of about the third day cease the bathing, and change the poultices every twelve hours, until relief has been afforded. At about the third or fourth day I think it advisable to give a laxative. Would also advise walking exercise, twenty to thirty minutes three or four times per day. At the onset of the disease the horse should be placed in a loose box-stall, well ventilated, and bedded deeply with short straw or sawdust. If the weather is cold clothe him warmly. If the appetite is not lost, give soft, easily digested food. After the effects of the disease have passed off, he may be shod with a wide-web shoe, and the external wall and sole of the hoof should be painted three or four times per week with some kind of hoof ointment. During this time he may be put to moderate work, or better still, if in summer time, turn on wet low pasture for several months, which will soften and stimulate the growth of the hoof.

ANAESTHESIA.

By F. Torrance, D. V. S., Winnipeg, Manitoba.

A Paper read before the Manitoba Veterinary Association, Feb. 16, 1897.

Last year the city of Boston celebrated the jubilee of the discovery of anæsthesia. Fifty years ago a dentist of Boston, named Morton, discovered that the inhalation of ether produced insensiblity to pain, and the first surgical operation under ether took place in the Massachusetts General Hospital on October 16, 1846. A year later, Dr. James Simpson, then Prof. of Midwifery at Edinborough, gave to the world the priceless boon of chloroform, and for many years had to wage an unceasing war against ignorance, prejudice, and even religious bigotry, before the world accepted the gift at its true value. It is hard for us to realize at the present day the storm of opposition that arose in many quarters against the introduction of chloroform. Even in the medical profession it was not received with open arms by any means. "Surgeons probably were inclined to look askance at a thing which came to them from an obstetrician. Moreover, it was a prevalent belief among them that the pain of an operation was a useful stimulant to the patient. On this ground the chief of the army medical staff recommended the surgeons during the Crimean war not to use choloroform. Fanatical clergymen denounced its use in labor as an impious attempt to evade the curse pronounced by the Almighty on Eve and all her daughters. Simpson fought these men with their own weapons, pointing out that the first operation under an anæsthetic had been performed by God himself, when he cast Adam into a deep sleep before removing his rib. The fight was an obstinate one, but Simpson was victorious, and chloroform won the place which it has held for many years, as the anæsthetic most widely used."

In the veterinary, as well as the medical and dental professions, we owe a debt of gratitude to those men, who, taking their lives in their hands, experimented upon themselves with various drugs until their search was rewarded by the discoveries of ether and chloroform, and it is for us to bring our modest tribute to the memories of Morton and Simpson. Are we as a profession making as much use of anæsthesia as we might, employing it every day to alleviate the sufferings of our patients under the knife or cautery? Every V. S. is familiar with chloroform, ether and cocaine, and understands the methods of administration theoretically, but practically, does he use them every day in his practice? I think not. Too many make no use of anæsthetics unless for the performance of an operation of an exceptional nature. Too many are satisfied to perform even serious operations without any anæsthetic, provided the struggles of the animal can be controlled in any other way, and there are some in the profession whose only anæsthetic is the twitch.

Is this apparent indifference to the sufferings of our patients a proof of our cruelty or hardheartedness? I hope not. We have chosen a profession whose very existence depends upon our ability and willingness to relieve our dumb patients when suffering disease, and to alleviate the pain and repair the damage resulting from injuries. Why, then, should we be indifferent to the pain inflicted by a surgical operation? Is it the cost of the drug, or the time required for its administration? I think not. The real reason, to my mind, lies deeper than this. It is the impression that there is a certain amount of danger in giving chloroform, that it requires a special apparatus for its administration, and lastly, that the patient must first be cast and secured with hobbles or ropes.

These certainly would be serious drawbacks if they were true; but they are more imaginary than real, and are the result of wrong teaching on the part of some who should know better. Fleming, for instance, describes the "Carlisle Inhaler" as necessary for the administration of chloroform. In Hoare's Therapeutics, p. 348, the same idea prevails, and with the opinions of such authorities before him, it is no wonder the general practitioner hesitates to give chloroform without an inhaler. These appliances have certain advantages, such as shortening the stage of excitement, and economizing the drug, but as to being essential in any way it is a great mistake. Chloroform may be administered safely without any special apparatus whatever, and I will give you briefly my experience with anæsthetics, in the hope that the subject will be fully discussed, and prove of benefit to each and all of us.

The subject naturally falls into two divisions—general and local anæsthesia. 1st. General Anæsthesia—Chloroform is the drug generally used for this purpose with the larger animals, as ether is less powerful and more expensive. The cheaper grades of chloroform seem to be equally effective with the best, and I consequently use a cheap grade, costing $1.00 per pound. The animal to be chloroformed requires no preparation in the way of dieting, as is sometimes advised. The nausea which often accompanies anæsthesia in human beings is not seen in horses and cattle, unless the distaste for food which is sometimes shown for a few hours afterwards is taken as an indication. The animal is preferably cast and secured in the usual way with hobbles, but even this is unnecessary, and I have often chloroformed horses and cattle on their feet. However, if you have the opportunity, it is better to secure the animal on the ground. I now take a good-sized sponge, which is slightly damp, and pour an ounce or two of chloroform upon it. This I apply lightly over one nostril while the other nostril is closed by the other hand. At each inspiration the sponge is lightly applied to the nostril, and at each expiration it is removed. This is to save chloroform, and is not essential. What is necessary is to avoid compressing the sponge with the hand or impeding the free passage of air to the lungs through it. The animal's head must be securely held during this stage, for the first whiff of chloroform is always followed by a violent struggle. Some long breaths follow this, and generally the succeeding struggles are less violent. More chloroform is dropped on the sponge from time to time, and I find it a good plan to cut a groove down the cork of the bottle, from which the chloroform can be sprinkled on the sponge without waste. I do not measure the amount of chloroform given, as I consider, with ordinary care, it is impossible to give an overdose to one of the larger animals. The respiration is carefully watched. It should be easy and natural. If hurried, shallow breathing comes on, more chloroform should be given, while if it is unduly slow or sighing, more air should be allowed. Oral breathing is quite frequent during administration of chloroform, and not much importance need be attached to it, but it interferes with the proper inhalation, and sometimes it is necessary to stuff a towel in the mouth to prevent it. As soon as the second stage is reached, I hand over the chloroform and the sponge to the assistant. Draw out the tongne, and let it hang out of the side of the mouth. It is a useful guide to an unqualified assistant as to the amount of chloroform to give, as the horse will show by twitching the tongue if consciousness is returning.

By these simple means I have chloroformed a large number of horses, as well as cattle, and have never seen any bad results from it, but have found it of immense value in all severe operations, such as embryotomy in mares and cows, and the surgical treatment of large hernias. In cases of difficult parturition it is extremely useful, as it abolishes straining, and renders the necessary manipulations much easier. Sometimes in difficult cases of this kind I have kept the animal under chloroform for hours without any ill effect, so the danger of an overdose must be very slight.

The effect of the chloroform will continue for some little time after inhalation has ceased, and it is necessary, while the animal is coming to, to have the legs secured, and some one to hold the head. Otherwise the horse may attempt to get up before he is able to stand, and would flounder about, and perhaps hurt himself. The time during which he should be watched is not very long, usually 10 or 15 minutes, and is longer in proportion to the amount of chloroform he has inhaled. Unless there is some special reason, it is better not to force the animal to get up until he is ready, as it is impossible to tell just when he will be able to stand. A good rough guide is the smell of chloroform on his breath. If strong, do not try to get him up, but if faint, he may be got up at once.

So much for the chloroforming of large animals. As for dogs, I do not as a rule use pure chloroform, as it is dangerous, and requires careful watching. I prefer the A.C.E. mixture, and find it quite satisfactory. The only appliance needed is a towel folded into a cone shape, with a small sponge fastened in the bottom of it. It is a very easy matter to give a dog an overdose of chloroform, and in such a case the quickest way to restore animation is to take the dog by the hind legs and swing him, head downwards, from side to side until he revives.

Local anæsthesia is a more recent discovery than general anæsthesia, and has lately enlarged its sphere of usefulness enormously, owing to the discovery of cocaine. At first the only way of producing local anæsthesia was by freezing the part by ether spray, or to render it numb by the use of ice and salt. At present the injection of cocaine solution is the method chiefly employed, and it is hardly possible to overestimate the value of this drug to the general practitioner. Recently a new method of employing it has been discovered, and promises to be of great usefulness. It is called cataphoresis, and is a process of driving the cocaine into the tissues by means of an electric current. It has already proved of great assistance in dentistry, and will probably be found useful, too, in our profession.

Cocaine is generally injected into the subcutaneous tissue with a hypodermic syringe. This should be kept clean, and not used for exploring pus cavities, or an abscess may form at the seat of puncture. The syringe should be large enough to hold two drachms of fluid, and it is an advantage to have the needle coupled on to the syringe simply by pushing one into the other. This will save many breakages of needles, as the needle can be inserted first and the syringe coupled on to it afterwards.

The solution of cocaine should always be freshly made, and only boiled and filtered water used for the purpose. When cocaine was first introduced, it was used in 10 and even 20 per cent. solutions, as it was thought that the stronger it was, the more powerful would be its effect. It is now found that these concentrated solutions are unnecessary, and that a 4 per cent.

solution is sufficient for all practical purposes. By combining a little common salt with the cocaine, the solution acts more quickly, and will produce its effect in five instead of fifteen minutes. The solution I use is of 4 per cent. cocaine, 2 per cent. salt in boiled water.

Cocaine solution may be used in several ways. The seat of operation may be injected with it, or else the nerve trunks leading to the part may be injected at some little distance. The first method is usually employed for the removal of tumors, and suturing of wounds, and the firing of spavins. The latter method is limited to the surgery of the feet and legs, but is extremely useful in firing ringbones, and in operations on the feet.

For suturing wounds, the point of the needle is inserted beneath the cut edges of the skin, and a few drops injected. The needle is withdrawn and inserted again half an inch from the first puncture, and a little more injected, and so on until the whole margin of the wound is injected. The animal does not, as a rule, object very much to the passing of a sharp needle into the subcutaneous tissue, and it is unnecessary to puncture the skin. After waiting a few minutes for the cocaine to take effect the wound may be sutured without the animal showing the slightest pain.

For firing horses the use of cocaine abolishes pain so satisfactorily that it is seldom necessary to cast an animal for the operation, and the twitch is only used while injecting the part. Spavins, ringbones, and back tendons can all be fired in this way without the animal showing the least pain, and the operator is not hampered by the movements of the animal, and can perform his work more carefully and satisfactorily. One need only mention, too, the use of cocaine in removing foreign bodies from the eye.

Such, then, are some of the many advantages of anæsthesia, both local and general, in veterinary practice—the prevention of pain to our patients, and the great advantage to the operator of abolishing those sudden and violent manifestations of pain which are a great hindrance to skilful surgery on the lower animals. No impartial man can deny that these great advantages outweigh a hundred fold any slight trouble and expense connected with the use of anæsthetics. May the time come in the veterinary profession when it will be the rule and not the exception to make use of the means at our command for the control of pain, and then the reproach can no longer be hurled at us, that we are indifferent to the suffering we inflict on our dumb patients.

[Written Specially for the American Veterinary Review.]

WAS THE HORSE INDIGENOUS TO AMERICA ?

By W. J. Martin, V. S., Kankakee, Ill.

From excavations recently made in a shell mound on Dauphins Isle, in Mobile Bay, there have been found many relics of the handiwork of prehistoric man that are of much interest to science. Among these relics may be mentioned a rude carving on stone which represents in outline the head and neck of a horse minus the ears. It has been claimed for these relics that they were the work of a race of people who built the shell mounds that are to be found scattered along the shores of Mobile Bay and the St. Johns River, in Florida. It is also asserted by many eminent archæologists that these people inhabited the southern portion of the American continent long before the people known as the mound builders came into the central and northern parts of the country.

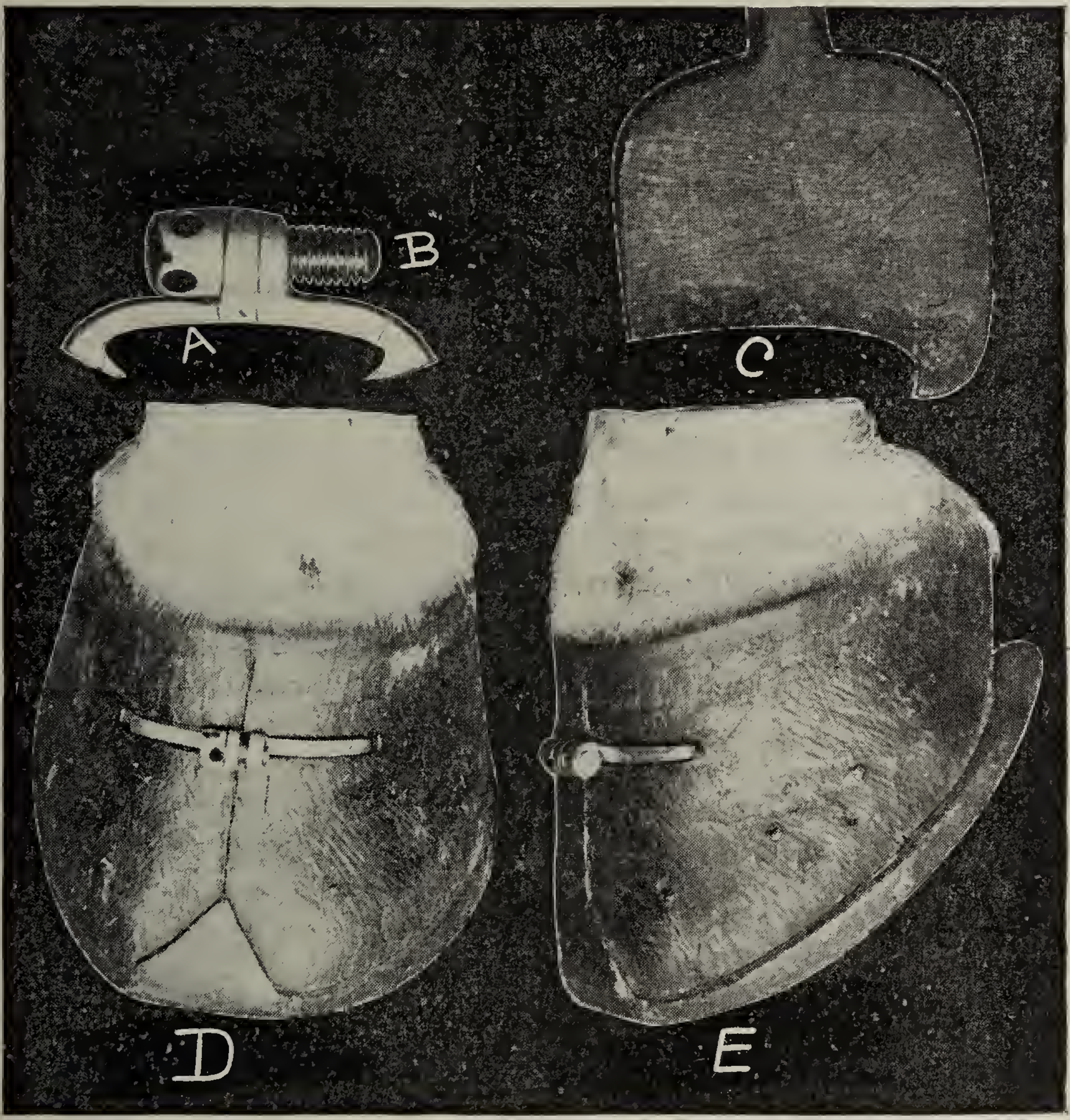
If this find is authentic, and there seems to be no reasonable doubt that it is, as the name of the owner of the relics is given, it bears out in a remarkable manner the idea long entertained by me, that the horse was an inhabitant of the interior of this country at the time of its discovery by Columbus. We know from the study of paleontology, that the horse existed in immense herds on the plains of both North and South America long before the countries were discovered by the European race. So great indeed, was the period of time which the horse had been an inhabitant of this country, that we find its bones covered over by many hundreds of feet of alluvial deposits of the Quaternary Epoch.

From the great variations in the size of the bones of the fossil horse found in America, it would be safe to assert that perhaps all the variations now so common among our domestic horses, was to a greater extent common among the fossil species. Bones of the fossil horse have been found in the quaternary deposits of both North and South America, that greatly exceeded in size the bones of our largest draft horses. From these downwards, all the variations in size can be traced by the bones of the fossil horse to animals that were even smaller than our present breeds of ponies. Not only are the bones of fossil horses found in this country that do not differ in any essential manner from the bones of our present race of horses, but there has also been found in many sections of this country the bones of an extinct animal from which our present horse species have descended.

It will be seen from the above, that the western hemisphere, instead of having been destitute of an indigenous race of horses (as it has been so long erroneously taught), was in reality the original home of the equine species and that it was by migration from this country that they spread over Asia and Europe. It has always been claimed heretofore that the horse had become extinct on the western hemisphere before prehistoric man had made his appearance in the country, and that previous to its introduction into the country by the Spaniards, the animal was totally unknown. It is true, that the graves of the mound builders have been most minutely searched in nearly all parts of the country, and of the vast amount of relics found in them, such as weapons of war and of the chase, household utensils and religious symbols, all more or less decorated or engraved with the images of the birds and beasts with which these people were familiar, no image of the horse has as far as I am aware ever been found previous to the one found on Dauphins Isle in Mobile Bay. This find would seem to prove conclusively that prehistoric man in America was quite familiar with the horse.

CLASPS AND TOE-CRACKS.

Everyone knows how troublesome toe-cracks or quarter-cracks are, and also how numerous are the means of a palliative nature that are recommended. Everyone has tried them all—the band, the strap, the barring with nails, the Vachette clasps, etc.,—and it may be difficult to say which offers the greatest advantage. A new mode of treatment was presented the other day by Manourcat, which is now claiming superiority. It is still a clasp and consists of two little metallic bands, about 2 ½



A—The two halves of the clasp. B—Screw to hold the halves together. C—Cautery to groove and notch the wall on each side of toe-crack. D—Front view of hoof with clasp in position. E—Lateral view of hoof with clasp in position.

to 3 inches long. At one end there is a hook, Vachette clasp style; at the other a little band, raised perpendicular to the rod, and which is perforated with a thread cut through the hole. The correspondings of each half of the clasps are made to meet and are brought together by a screw which can be made tight, more or less, so as to hold firmly together both edges of the crack when the instrument is in place. A cautery, made also Vachette style, is necessary to burn in the wall a notch to permit the introduction of the hook of the clasp, and also make a groove for the reception of both metallic rods which once screwed together prevent any motion of the two edges of the seamed wall. It is claimed that this instrument will hold firm forever, and permit the essential requirements for radical recovery to take place, viz., the cicatrization of the solution of continuity at the coronary band.

What was most peculiar and to our mind most amusing in the presentation of the instrument at the Société Centrale was the objection that was raised in relation to the publication of figures illustrating the instrument by itself and in position on the foot —under the pretext that it would be too expensive, not for this case only, but a bad precedent, as others might demand the same. As those publications are made in one journal, and as that journal, we believe, is a handsome paying institution, to us, with our American ideas of go-ahead in journalism, the refusal to have a wood-cut made under the excuse given above, has seemed to us very peculiar, to say the least.

More liberal than our French *confrères*, I send you the woodcuts from photos by Prof. Lignieres, of Alfort, which will make the whole description more interesting. A. L.

PARIS, FRANCE, July 10, 1897.

THE MANITOBA VETERINARY ASSOCIATION is of opinion that the name of the United States Veterinary Medical Association should be changed to the American Veterinary Association, so that the veterinarians of Canada and other American countries might be encouraged to affiliate.

REPORTS OF CASES.

INFECTIOUS PNEUMONIA IN NORTH CAROLINA.

By J. W. Petty, V. S., Greensboro, N. C.

I was sent by the North Carolina Board of Agriculture on March 26th, to investigate an outbreak of what proved to be infectious pneumonia, at Summerfield, N. C. A post-mortem was held on one gelding that had died, and the lungs showed circumscribed cavities, some of which contained gangrenous fluid, others pus, and some broken-down lung tissue, all of which illustrated the different stages of the disease and the progress made upon different parts of the lungs. All the animals that had been sick for ten days died. Three horses were at this time in the congestive stage, and two had elevated temperatures, cough, loss of appetite, and restlessness, and some had profuse diarrhœa, while others again were constipated. All the sick and exposed animals were at once quarantined, the sick being treated with acetanilid as required to control fever, muriate of ammonia, cinchona, whiskey, and other stimulants as indicated, with due attention to the regulation of the bowels, ventilation, clothing, etc. The exposed ones were isolated and treated with prophylactics, only one of them contracting the disease. All made good recoveries with the exception of slight abdominal breathing as a result of the cavities in the lungs.

HERMAPHRODISM.

By J. A. Couture, V. S., Quebec.

On July 7th last, a curious case of so-called hermaphrodism was brought to my notice. It was a Canadian pony, about 15 hands, twelve years old, very nice looking animal, bred and owned since birth by a farmer living in the mountains of the County of Charleroix, in the Province of Quebec.

The subject had a pair of normal inguinal testes, which gave issue to a yellowish liquid when drawn by the fingers. In exploring the inguinal region I felt near the inguinal rings two testicles, the size of a hen's egg; these testicles were floating and might be either drawn up close to the ring or let down. The anus was much smaller than the normal. Looking at a distance, when the animal's tail was kept elevated, one would think that he had a normal vulva, though much longer than usual. By a closer examination it could be seen that this part was closed, divided by a raphæ, like the scrotum, and opened only at the bottom part by an opening measuring one and one-half inches. The lips of this opening were thin and not large enough to close it entirely. Protruding slightly through this opening was the meatus of a penis devoid of its glans. When the animal was brought near mares this rudimentary penis was erected and protruded about six inches outside. Its size was about one and one-half inches in diameter when erected.

I am sorry that circumstances did not allow of a thorough examination to see if there was a uterus and what was the course of this rudimentary penis. I am, however, inclined to think that there was no uterus and that the animal is a male with penis taking a posterior direction instead of an anterior one.

POLYURIA FROM TURPENTINE IRRITATION.

By J. W. PETTY, V. S., Greensboro, N. C.

I was recently called to investigate a supposed contagious disease, where ten horses in one stable showed every symptom of diabetes—wasting of flesh, profuse diuresis, etc. Investigation showed that a pile of pine sawdust that had been used for bedding had drained into a shallow well only a few yards down the hill, from which the horses were watered. The turpentine could be tasted in the water, and it was very evident that absorption from the pine dust was the cause of the trouble. Of course I ordered watering from another well, and the horses returned to a normal condition.

DR. J. W. PETTY, of Greensboro, N. C., writes: "I have successfully treated two cases of tetanus with quinine in half-ounce doses three times a day, with belladonna and chloroform as needed. Horses with tetanus seem to stand a large amount of quinine."

THE TUBERCULIN TEST IN MASSACHUSETTS.

REPORT OF THE EXPERTS EMPLOYED BY THE LEGISLATIVE COMMITTEE.

In the July number of the REVIEW we printed the report of the joint committee of the Massachusetts Legislature, said committee having been appointed for the purpose of employing veterinarian experts to examine, destroy and hold autopsies on a large number of cattle in the vicinity of Lowell, which had been condemned as tuberculous by the tuberculin test in the hands of the agents of the Cattle Commissioners, it being the opinion of the law-makers that this procedure would settle for all time the disputed question as to the accuracy of tuberculin as a diagnostic of bovine tuberculosis. The report referred to embraced both a majority and minority finding, and both are based upon the conclusions of the experts, who are as widely different in their estimates of the value and consistency of the serum as are the legislative committeemen.

We begin this month the publication of the reports of the various veterinarians employed, which will be reproduced *in extenso*, that their full value may be appreciated by our readers, who may thus be better prepared to give a conclusion as to the merits of the important serum under discussion.

REPORT OF HAROLD C. ERNST, A.M., M.D.,

Professor of Bacteriology in Harvard University.

First Series.—Condemned Cows.

1. 10224. Tuberculous foci in the posterior pharyngeal, the mediastinal and bronchial glands; small foci in one udder gland.
2. 10203. Tuberculous foci in the mediastinal and bronchial glands, with suspicious appearances in the left udder and flank glands.
3. 9622. Tuberculosis foci in the bronchial and mediastinal glands and foci in the left flank gland as well, together with a suspicious appearance of the left udder gland.
4. 9697. Tuberculous foci in the bronchial and mediastinal glands.
5. 10254. Tuberculous nodules in the bronchial and mediastinal glands, together with several foci in the liver.
6. 96777. Tuberculous foci in the left retro-pharyngeal gland; all the mediastinal and bronchial glands badly affected, and the inguinal glands as well.
7. 10214. Lungs were adherent and showed several tuberculous nodules; the bronchial and mediastinal glands were badly affected, and there were several small tuberculous foci in the liver.
8. 9693. Tuberculous retro-pharyngeal glands on the right side; mediastinal and bronchial glands affected, as well as the lungs; udder nodular and swollen, but not distinctly tuberculous; a number of tuberculous nodules in the liver.
9. 10261. Tuberculous nodules in the bronchial and mediastinal glands; some nodules in the liver, as well as an abscess.
10. 9642. Negative throughout; reported not to have reacted, and should not have been presented for examination.
11. 9640. Lungs and adjacent lymph glands severely affected with advanced tuberculous process; the glands in the hilus of the liver also tuberculous.
12. 10234. Retro-pharyngeal glands severely affected with tuberculosis; bronchial and mediastinal glands and lungs extensively diseased; numerous nodules in the liver.
13. 10237. Tuberculous foci in the bronchial and mediastinal glands; udder gargetty.
14. 9667. Tuberculous foci in the bronchial and mediastinal glands and in the lungs, and extensive tuberculous disease of the intestinal glands.
15. 10288. Tuberculous disease of the bronchial and mediastinal glands; several nodules in the lungs.
16. 9630. Tubercular disease of the bronchial and mediastinal glands.

17. 9637. Tubercular disease of the bronchial and mediastinal glands.
18. 10262. Small foci of tuberculosis in the bronchial and mediastinal glands.
19. 10262. A number of small foci of tubercolosis in the bronchial and mediastinal glands; one small nodule in the lung.
20. 10298. Tubercolosis of the right retro-pharyngeal gland; bronchial and mediastinal glands affected; nodules in both lungs.
21. 9670. Extensive disease of the bronchial and mediastinal glands.
22. 9681. Extensive disease in the bronchial and mediastinal glands; tuberculous nodules in both lungs.
23. 9639. Tuberculous foci in the bronchial and mediastinal glands and in both lungs.
24. 9662. Tuberculous retro-pharyngeal glands (both sides); very extensive affection of both lungs, of bronchial and mediastinal glands, of glands in hilus of liver, and of the mesenteric glands.
25. 9679. Slight tuberculous infection of the mediastinal lymph glands.
26. 9671. Tuberculous infection of the retro-pharyngeal glands of both sides, of the mediastinal glands, and a few nodules in the lungs.
27. 9634. A few tuberculous nodules in the mediastinal lymph glands; abscesses near the gall-ducts.
28. 9675. Tuberculous nodules in the mediastinal lymph glands; a few nodules in the left lung.
29. 9695. Both retro-pharyngeal glands tuberculous; tuberculosis of the mediastinal lymph glands, and nodules in both lungs.
30. 9645. Tuberculous foci in the mediastinal lymph gland.
31. 9673. Tuberculous foci in the mediastinal glands; a small nodule in the anterior lobe of the left (?) lung.
32. 9631. Both retro-pharyngeal glands tuberculous; mediastinal glands show small foci; a small nodule in the anterior lobe of the left (?) lung.
33. 9611. Tuberculous mediastinal glands; several nodules in the left lung.
34. 9615. Tuberculous mediastinal glands; a small nodule in the left lung.
35. 9674. Tuberculous mediastinal glands.
36. 9646. Tubercolous retro-pharyngeal glands on both sides; mediastinal glands; nodules in both lungs.

Numbers 37 to 66 were examined upon a day when I could not be present, and the record of these animals will therefore be presented to the committee in the reports of the other experts present at the time. I have understood, however, that they all showed tuberculous lesions to a more or less marked degree.

67. 9625. Tuberculous foci in the left bronchial gland.
68. 9603. Small tuberculous foci in one mediastinal gland.
69. 9619. Tuberculous foci in the left bronchial and in the mediastinal glands.
70. 9607. Large and small tuberculous foci found in several mediastinal glands.
71. 9618. Mediastinal and left bronchial glands much enlarged and broken down in cheesy tuberculous masses; large cheesy nodule in left caudal lobe and a smaller one in the right caudal lobe.
72. 9604. Large softened tuberculous mass in the left bronchial gland; posterior mediastinal glands in the same condition.
73. 9661. No gross lesions of tuberculosis found. (Material saved for microscopic examination.)
74. 9660. Left retro-pharyngeal gland contained a large, cheesy, tuberculous nodule; all the bronchial and mediastinal glands enlarged and broken down (tuberculous; four large tuberculous nodules in the left caudal lobe and several smaller ones in the right lung.
75. 9684. Right retro-pharyngeal gland much enlarged and broken down (tuberculous); extensive enlargement and degeneration of all the bronchial and mediastinal glands; several large and cheesy nodules in the right caudal lobe and some smaller ones in the right middle lobe.
76. 10300. Small tubercular foci in the posterior mediastinal gland, several in the left bronchial gland and some minute tubercles in the other glands in this region.

77. 9650. A number of small tubercular foci in the bronchial and mediastinal glands; a large broken-down nodule in the left caudal lobe and several smaller ones in the right lung.
78. 9657. Tubercular nodules in the left bronchial and several of the mediastinal glands.
79. 9668. Tuberculosis of all bronchial and mediastinal glands; very large broken-down areas in both caudal and left ventral lobes; discharging tuberculous material through the trachea.
80. 9672. Extensive tuberculosis of all bronchial and mediastinal glands; minute foci in the right caudal lobe.
81. 9635. Numerous cheesy foci in retro-pharyngeal gland; many small foci in bronchial and mediastinal glands; degenerated foci in both caudal lobes.
82. 9624. Tuberculosis of bronchial and mediastinal glands; several foci in the lungs; a small tubercle on gum near left incisor (?) tooth, reserved for microscopic examination (not completed).
83. 9627. All bronchial and mediastinal glands much enlarged and cheesy; multiple broken-down foci in both lungs.
84. 9606. Large broken-down focus in left caudal and left ventral lobes.
85. 9652. Extensive tubercular deposits on pleura of both sides at anterior lobes; bronchial and mediastinal glands much enlarged and cheesy; numerous nodules throughout both lungs.
86. 9700. Tuberculous foci in all bronchial and mediastinal glands; a number of small nodules in both lungs.
87. 9676. Small tubercular nodule in left bronchial gland; several small foci in two mediastinal glands; one calcareous nodule in right tracheal gland.
88. 9669. Tubercular nodule (small) in right retro-pharyngeal gland; multiple infection in all bronchial and mediastinal glands, which were several times enlarged; two small nodules in liver.
89. 9602. Left retro-pharyngeal gland enlarged and broken down; two small foci, one in each caudal lobe (tuberculous).
90. 10266. All bronchial and mediastinal glands much enlarged and broken down (tuberculous).
91. 9685. One-inch abscess in liver; no gross tuberculous lesions found. (Gland reserved for microscopic examination.)
92. 10222. One small tubercle in left bronchial gland.
93. 9632. A number of small tubercular foci in bronchial glands.
94. 9680. A number of small tubercular foci in bronchial and mediastinal glands; one small cheesy nodule in the right ventral lobe.
95. 9628. Small calcareous nodule in posterior mediastinal gland and smaller one in middle gland.
96. 9644. Middle mediastinal and left bronchial glands contain small tubercular nodules; a large cheesy mass in the right ventral lobe.
97. 9672. Left retro-pharyngeal gland contained a single large cheesy focus; three large (two-inch) foci in lungs, one (of same size) in liver.
98. 10238. Tubercular foci in the cervical gland, in both retro-pharyngeal glands, in all the bronchial and and mediastinal glands, which were much enlarged and cheesy, many in both lungs, mesenteric glands, portal and renal glands; and multiple foci throughout the liver.
99. 9691. Numerous foci in left retro-pharyngeal gland and several small ones in the left bronchial and mediastinal glands.
100. 10256. Bronchial and mediastinal glands much enlarged and cheesy; several walnut-sized foci in right lung and one in left posterior lobe; right udder gland nearly the size of an orange, and cheesy.
101. 10269. Single tubercular nodule in right retro-pharyngeal gland; mediastinal glands and bronchial much enlarged and broken down; disseminated tuberculosis throughout both lungs; caseous foci in mesenteric glands.
102. 9664. Small tubercular nodules in middle mediastinal glands.
103. 9663. Many tubercular foci in mediastinal glands; large nodule in right caudal lobe completely broken down; several smaller foci in the same lobe.

104.	10294.	A number of small tubercular foci in left retro-pharyngeal gland; several (three) mesenteric glands enlarged and calcareous; all bronchial and mediastinal glands enlarged and containing cheesy masses; very large tubercular mass in left caudal lobe and many smaller nodules throughout both lungs.
105.	10259.	Cheesy tubercular degeneration of middle mediastinal glands; cheesy nodules in the mesenterics.
106.	10271.	Left parotid much enlarged and cheesy; left retro-pharyngeal gland enlarged and cheesy; left bronchial gland enlarged and cheesy.
107.	10213.	Middle mediastinal gland enlarged and entirely cheesy; one inch foul-smelling abscess in right bronchial gland.
108.	10218.	Tubercular nodules in left bronchial and mediastinal glands; a small (one-half inch) focus in left caudal lobe.
109.	9693	Tubercular nodules in left retro-pharyngeal gland.
110.	10221.	Three small tubercular nodules in left bronchial gland.
111.	10208.	A small (one-half inch) cheesy tubercular focus in two mediastinal glands.
112.	10239.	Several small tubercular nodules in posterior mediastinal glands and also in the left bronchial gland.
113.	9643.	Large and small tubercular nodules in mediastinal glands; two-inch tubercular mass in right caudal lobe.
114.	9687.	A few minute foci in bronchial and mediastinal glands, a larger one (one inch) in left retro-pharyngeal gland completely broken down; a number of minute tubercles in two portal glands; several abscesses (four) in right fore quarter of the udder.
115.	10270.	Several minute nodules in left retro-pharyngeal gland; small calcareous tubercles in mediastinal and left bronchial glands; a single cheesy mass in left caudal lobe.
116.	10265.	All bronchial and mediastinal glands much enlarged and filled with cheesy and calcareous deposits; a small nodule in the left caudal lobe.
117.	10217.	Two small tubercular cheesy nodules in posterior mediastinal gland; slight tubercular infection of the mesenterics.
118.	9623.	Left bronchial and posterior mediastinal glands contain numerous small tubercular nodules; somewhat larger mass (one-half inch) in posterior lobes of left lung.
119.	9698.	Extensive tubercular pericarditis with adhesion; tubercular pleuritis with adhesions; extensive infection of the posterior mediastinal glands and tubercular infection of the portal glands and the surface of the liver.
120.	10277.	Tubercular nodules in posterior and middle mediastinal glands.
121.	10226.	One minute nodule in an axillary lymph gland, yellowish in color (reserved for microscopic examination, page 10).
122.	9610.	Nothing found. (Reaction only slight, not sufficient for condemnation).
123.	10219.	A single calcareous nodule in left bronchial gland.
124.	9688.	A bunch of small cheesy tubercles in right udder gland.
125.	9655.	Small tubercular nodule in left bronchial gland and a number of similar nodules in posterior mediastinal gland.
126.	9616.	Cheesy tubercular nodule in mediastinal gland and in left caudal lobe.
127.	10279.	Small (one-quarter inch) tubercular nodule in left bronchial and mediastinal glands, and a single similar one in left caudal lobe of lung.
128.	9633.	Left retro-pharyngeal gland much enlarged and cheesy; left cervical gland in same condition; cheesy nodules in mesenteric glands.
129.	10263.	Multiple cheesy nodules in left bronchial gland.
130.	9654.	Several cheesy tubercular masses in right retro-pharyngeal gland; a single deposit in left bronchial gland; a number of the mediastinal glands infected; a single (three-quarter inch) cheesy tubercular deposit in the right caudal lobe

Second Series.— Uncondemned Cows.

This series comprises the animals that were slaughtered on the last day. They had been tested with tuberculin some five weeks previously, at the same time as the preceding, but had not been condemned as tuberculous.

1. 9103. Healthy.
2. 0145. A number of fairly large broken-down tuberculous nodules in right tracheal gland ; multiple tubercles in one mediastinal gland.
3. 9132. Multiple tuberculous foci (small) in left bronchial gland and in upper mediastinal gland ; a single small tubercle in right caudal lobe ; a flat suspicious-looking nodule on external muscular surface of the abdomen.
4. 9158. Healthy.
5. 6576. Abscess in liver ; non-tuberculous.
6. 9137. Healthy.
7. 9117. Abscess in liver ; non-tuberculous.
8. 9194. Healthy.
9. 6524. Healthy.
10. 6558. Abscess the size of a hen's egg attached to the caudal lobe of the right lung and to the diaphragm ; non-tuberculous.
11. 9184. Healthy.
12, 9101. Healthy.
13, 6530. Multiple abscesses in liver ; non-tuberculous.
14. 9162. Minute tubercles in both mediastinal glands ; a small one in the right caudal lobe.
15. 9173. A single calcified pin-head nodule in one left bronchial gland.
16. 9167. Healthy.
17. 9119. Posterior mediastinal gland contained one minute nodule, no other lesions. (Reserved by Dr. Smith for microscopic examination ; since reported upon by him as non-tuberculous.)
18. 9104. Several minute tubercles in left mediastinal and bronchial glands.
19. 9176. Healthy.
20. 6587. Several minute tubercles in posterior mediastinal glands.

Of these 20 animals that had been tested with tuberculin and not condemned, there appear to be 6 that show signs of infection at the post-mortem examination. It is unfortunate that they were not all re-tested just before the slaughtering, for it is quite open to question whether in some of them the infection did not occur *after* the first injection of tuberculin. *In none of them was there any extensive infection.*

Summary.

One hundred and thirty animals tested with tuberculin and killed in the presence of experts called by the special joint committee of the Legislature. I was present, and examined 90 of these. One (No. 10) should be omitted, for the reason that it did not react and was not condemned, having been sent with the others by accident. This leaves 89 that I saw and examined in person. Of these, No. 91 presented no gross lesions, and there has not been sufficient time to complete a microscopic examination ; No. 122 reacted to the test so slightly that the animal should not have been condemned ; and the tubercle reserved for microscopic examination from No. 121 has not yet been satisfactorily studied. The 30 animals that I did not see and examine all presented satisfactory evidence of tuberculous infection, and, considering the two, Nos. 91 and 121, to be non-tuberculous, the percentage of accuracy is very great; slightly more than one per cent. of the animals were condemned unnecessarily.

On the other hand, of the 20 animals selected from the remainder of the herds that were tested and not condemned, 6 were found to be undoubtedly tuberculous, but none of them extensively so. Of these 6, 1 (No. 15) presented but a single minute lesion, and that in an inactive stage, so that the probabilities are that her condition was one of recovery; in at least 3 others (Nos. 14, 18 and 20) the lesions were so small that it is an open question whether the infection might not have occurred *after* the test was made, and before the examination,—a period of, as I understand, five weeks.

Counting all of the apparent mistakes as actual errors, however, it gives a percentage of variation of 5.5; the error in the direction of unnecessary condemnation being much less than in the line of allowing slightly infected animals to pass.

Respectfully submitted,
HAROLD C. ERNST, A.M., M.D.,
Professor of Bacteriology in Harvard University.

REPORT OF THEOBALD SMITH, M.D.,

Professor of Comparative Pathology in Harvard University.

JAMAICA PLAINS, MASS., May 10, 1897.

To the Special Joint Committee authorized to investigate certain cattle belonging to farmers of Dracut and Lowell.

GENTLEMEN:—It has been possible for me to attend the post-mortem examination of 112 of the cattle condemned by the tuberculin test. Of this number I regard 4 as free from tuberculosis and 108 as infected.

The infected I have divided, in accordance with the notes taken at the autopsies, into five categories, according to the severity and extent of the disease. In these five categories the animals may be tentatively placed as follows:

22 in first category (very slight disease).
36 in second category (slight disease).
28 in third category (moderate disease).
16 in fourth category (fairly severe disease).
8 in fifth category (extensive disease).

Of the 20 animals killed, which had failed to react after the injection of tuberculin, I was able to examine every case. These may be divided as follows:

14 free from recognizable tuberculosis.
3 affected very slightly.
3 slightly diseased.

For your convenience, I have entered every case examined by me on the accompanying table. The crosses signify tuberculosis of the organs indicated at the head of the respective columns. The extent of the disease in each organ is expressed approximately by the relative number of lines composing the cross.

Respectfully submitted,

THEOBALD SMITH, M.D.,
Professor of Comparative Pathology in Harvard University.

REPORT OF GEORGE N. KINNELL, VETERINARIAN.

The Tuberculosis Committee, Massachusetts Legislature.

GENTLEMEN:—Reporting on the animals slaughtered at Brighton April 14, 15, 16 and 21, also on May 4, I find that we killed and examined in all 150 head, classified as follows:

Animal condemned on physical symptoms	1
Animals that reacted to tuberculin test	129
Animals that did not react, but killed for purposes of investigation	20

In the cow condemned on physical examination, No. 10, ear tag 9642 (Osborn Merrill), no tuberculous lesions were discovered, but she was found to be the subject of multiple abscesses and fistulous tracts, involving the second stomach, the liver, diaphragm and bases of both lungs. The diseased condition was determined by a foreign body passing from the second stomach and penetrating towards the heart. The symptoms which this condition gives rise to, viz., coughing, difficulty in breathing and emaciation, are symptoms which, in making a physical ante-mortem examination, may readily be mistaken for the evidences of an advanced stage of tuberculosis.

Of the 129 reacting animals, 125 showed lesions of tuberculosis palpable to the naked eye.

Of the remaining 4 cows, 1, No. 121, ear tag 10,266 (E. T. Fox), showed an abnormal condition of one of the axillary lymphatic glands; but whether or not of a tubercular nature is a point which can only be settled by a bacteriological examination.

This leaves three animals to be accounted for. They were as follows:

No. 73, ear tag 9612	E. A. Jones.
No. 91, ear tag 9685	R. S. Fox.
No. 122, ear tag 9610	R. S. Fox.

Of these I have nothing to say, further than that the search for lesions of the disease was as exhaustive and as thorough as the circumstances would permit, and, so far as gross appearances were to be trusted, no evidences of tuberculosis or of any other disease were to be found.

A thorough ocular examination of the various bones was not, under the circumstances, practicable, and the bacteriological examination of the tissues is a matter for delicate microscopic research and prolonged inoculation experiments upon living animals.

To sum up: of 129 reacting animals there were:

Positively tuberculous	125
Questionable (No. 121)	1
Negative (Nos. 73, 91, and 122)	3
Total	129

Percentage of error, approximately, 2⅓ per cent.

In the 20 non-reacting animals slaughtered for purposes of investigation, I found as follows:

Non tuberculous	13
Tuberculous	6
Questionable	1

The tuberculous animals were these, viz.:

No. 2, tag 9145	Jones.
No. 3, tag 9162	Merrill.
No. 14, tag 9162	Jones.
No. 15, tag 9173	Merrill.
No. 18, tag 9104	Thissell.
No. 20, tag 6587	Merrill.

In these animals the lesions were uniformly small and in the early stages. One of them, No. 15, tag 9173 (Merrill), had a minute calcified lesion in a bronchial gland, and was evidently a recovered case.

The questionable case was No. 17, tag 9119 (Jones). This animal was found to have in one bronchial lymphatic gland a small nodule, but whether or not of a tubercular nature can only be decided by microscopic examination.

To sum up the whole matter: leaving out the two questionable cases, and comparing the results of the examinations with the reliability of tuberculin as a test, we find that in 148 animals there were 3 which reacted that ought not to have reacted, and 6 which did not react that ought to have reacted, making, in sins of omission and commission, a total of 9; or, in other words, a total error on the part of tuberculin of approximately $6\frac{1}{12}$ per cent.

Among veterinarians it is a well-known fact that all tuberculous animals do not react to a first tuberculin test; and, in order to ensure thorough work in picking out the diseased animals from a herd, it is essential that the reagent should be applied two or three times, at intervals of as many months. Used in this way, the test is practically infallible, and all diseased animals can be eliminated. Every wise farmer ought, for his own protection, to have his entire herd tested regularly every year, for the same reason that he will take care that the fire insurance policies on his stock or buildings do not lapse.

Respectfully,
GEORGE N. KINNELL,
Veterinarian.

PITTSFIELD, May 7, 1897.

Notes on Post-mortem Examinations of Cattle slaughtered at Brighton April 14, 15 and 16, 1897.

No. 1. Tag 10224. A. J. Thissell. Tuberculosis of retro-pharyngeal lymphatic glands and of adjacent lung glands
2. 10203. A. J. Thissell. Tuberculosis of the lymphatic glands adjacent to lungs.
3. 9622. F. A. Jones. Tuberculosis of lymphatic glands adjacent to lungs.
4. 9697. Osborn Merrill. Lungs adherent to sides; tuberculosis of adjacent lymphatic glands.
5. 10254. Osborn Merrill. Pulmonary lymphatic glands diseased; tubercular nodes in liver substances.
6. 96777. Osborn Merrill. Tuberculosis of left retro-pharyngeal gland, of adjacent lung glands and of inguinal lymphatic gland.
7. 10214. O. Merrill. Lungs adherent to sides; adjacent glands tubercular; nodes in lungs and liver.
8. 9693. E. A. Jones. Tuberculosis of right retro-pharyngeal gland, of both lungs and adjacent glands—a bad case; several nodes in liver.
9. 10261. O Merrill. Tuberculosis of pulmonary lymphatic glands; nodes and abscess in liver.
10. 9642. O. Merrill No tubercular lesions; abscesses and fistulous tracts involving reticulum (second stomach), diaphragm, liver and bases of both lungs, due to a foreign body penetrating from stomach towards the heart.
11. 9640. E. A. Jones. Lungs and adjacent lymphatic glands badly tuberculous; also hepatic lymphatic glands diseased.
12. 10234. O. Merrill. Advanced tuberculosis of left retro-pharyngeal gland, of lungs and adjacent lymphatic glands; also numerous nodes in liver.
13. 10237. O Merrill. Pulmonary lymphatic glands tuberculous.
14. 9667. O. Merrill. Lungs and adjacent glands tuberculous; portal lymphatic glands badly tuberculous.
15. 10288. O. Merrill. Lungs and adjacent glands tuberculous.
16. 9630. O. Merrill. Pulmonary glands tuberculous.

No. 17. Tag 9637. O. Merrill. Pnlmonary lymphatic glands tuberculous.
18. 10262. O. Merrill. Pulmonary lymphatic glands slightly tuberculous.
19. 10298. O. Merrill. Small node in one lung; adjacent glands tuberculous.
20. 10298. O. Merrill. Tuberculosis ot left pharyngeal gland, of both lungs and of adjacent pulmonary glands.
21. 9670. F. A. Fox. Pulmonary glands tuberculous.
22. 9681. F. A. Fox. Pulmonary lymphatic glands badly diseased.
23. 9636. F. A. Fox. Tuberculosis of both lungs and of adjacent glands.
24. 9662. F. A. Fox. Tuberculosis of retro-pharyngeal glands, of both lungs, of adjacent pulmonary glands and ot liver and adjacent glands.
25. 9679. F. A. Fox. Pulmonary lymphatic glands tuberculous.
26. 9671. F. A. Fox. Tuberculosis of retro-pharyngeal glands, of both lungs and of adjacent glands.
27. 9634. O. Merrill. Tuberculosis of pulmonary glands.
28. 9675. F. A. Fox. Tuberculosis of left lung and of adjacent pulmonary glands.
29. 9695. F. A. Fox. Tuberculosis of pharyngeal glands, of both lungs and of adjacent pulmonary glands.
30. 9645. O. Merrill. Slight tuberculosis of pulmonary glands.
31. 9673. F. A. Fox. Tuberculosis of one lung and of adjacent glands.
32. 9631. F. A. Fox. Tuberculosis of pharyngeal glands, one lung and adjacent glands.
33. 9611. F. A. Fox. Tuberculosis of both lungs and adjacent glands.
34. 9615. F. A. Fox. Tuberculosis of lungs and pulmonary glands.
35. 9674. Fox. Tuberculosis of pulmonary glands.
36. 9646. F. A. Fox. Advanced disease of pharyngeal glands and of lungs and adjacent glands.
37. 9614. Fox. Tuberculosis of lungs and adjacent glands.
38. 10284. O. Merrill. Tuberculosis of lungs and adjacent glands.
39. 9601. Fox. Tuberculosis of right lung and adjacent glands.
40. 9626. O. Merrill. Tuberculosis of pulmonary lymphatics.
41. 10289. O. Merrill. Tuberculosis of lungs and adjacent glands.
42. 10264. N. L. Peavy. Small node of tuberculosis in portal gland.
43. 9659. C. E. Jones. Tuberculous node in lobe of right lung.
44. 9683. C. E. Jones. Pulmonary glands tuberculous.
45. 10287. O. Merrill. Tuberculosis of pharyngeals, of lungs and adjacent glands; also of liver.
46. 9608. F. A. Fox. Tuberculosis of lungs and adjacent glands.
47. 9617. C. E. Jones. Tuberculosis of lungs and glands.
48. 9629. F. A. Fox. Tuberculous growth on left stiflejoint, involving periosteum.
49. 10231. O. Merrill. Tuberculosis of lungs, adjacent lymphatic glands and liver.
50. 9620. C. E. Jones. Lungs and adjacent glands diseased.
51. 10293. O. Merrill. Lungs and adjacent glands tuberculous.
52. 9689. F. A. Fox. Tuberculosis of lungs and adjacent glands.
53. 9609. Fox. Lungs and adjacent glands tuberculous.
54. 10232. O. Merrill. Tuberculosis of pharyngeal glands and of lungs and adjacent glands.
55. 9621. O. Merrill. Tuberculosis of pulmonary glands.
56. 9613. C. E. Jones. Lungs and adjacent glands tuberculous.
57. 10243. O. Merrill. Tuberculosis of lungs and adjacent glands.
58. 10285. O. Merrill. Tuberculosis of pharyngeal glands, lung and adjacent glands.
59. 9665. Fox. Tuberculosis of lungs and adjacent glands.
60. 9638. Fox. Tuberculosis of right lung and adjacent glands.
61. 9660. Fox. Tuberculosis of bronchial lymphatic glands
62. 9656. Fox. Tuberculosis of lungs and adjacent glands.

No. 63. Tag 9666. Fox. Tuberculosis of lungs and adjacent glands.
64. 9682. Jones. Tuberculosis of pharyngeal glands and of lungs and adjacent glands (a very fat cow).
65. 9605. Fox. Tuberculosis of both pharyngeal glands, of both lungs and all adjacent glands, also of mesenteric glands and spleen.
66. 9658. Merrill. Tuberculosis of pharyngeal gland, of both lungs and adjacent glands, also of hepatic glands and mesenteric glands.
67. 9625. Fox. Tuberculosis of bronchial glands, slight.
68. 9603. Fox. Slight tuberculosis of bronchial and mediastinal glands.
69. 9619. Fox. Tuberculosis of bronchial and mediastinal glands; doubtful abscess in liver.
70. 9607. Fox. Tuberculosis of pulmonary lymphatic glands.
71. 9618. Fox. Pulmonary glands tuberculous.
72. 9604. Fox. Tuberculosis of left lung and adjacent glands.
73. 9612. Jones. No trace of any disease of any kind.
74. 9660. Fox. Tuberculosis of pharyngeal gland, both lungs and adjacent glands.
75. 9684. Fox. Tuberculosis of pharyngeal gland, in lung and adjacent glands.
76. 10300. N. L. Peavy. Tuberculosis of lungs and adjacent glands.
77. 9650. Fox. Tuberculosis of lungs and adjacent glands.
78. 9657. Fox. Tuberculosis of pulmonary glands.
79. 9668. Fox. Advanced tuberculosis in both lungs and all adjacent glands.
80. 9672. Fox. Tuberculosis of both lungs and adjacent glands.
81. 9335. Fox. Tuberculosis of post-pharyngeal glands, in both lungs and adjacent glands.
82. 9624. Fox. Tuberculosis of lungs and pulmonary glands; garget in udder.
83. 9627. Fox. Profuse nodes in lungs and glands adjacent.
84. 9606. Fox. Tuberculosis of lungs and adjacent glands; tubercular abscess at base of liver.
85. 9652. Fox. Tuberculosis of pleura, lungs and adjacent glands.
86. 9700. Fox. Tuberculosis of lungs and adjacent glands.
87. 9676. Fox. Pulmonary glands tuberculous; slight garget.
88. 9669. Fox. Tuberculosis of pharyngeal glands and pulmonary glands.
89. 9602. Fox. Tuberculosis of pharyngeal glands and lungs.
90. 10266. Merrill. Pulmonary glands diseased with tuberculosis.

Report of Cattle slaughtered April 21, 1897.

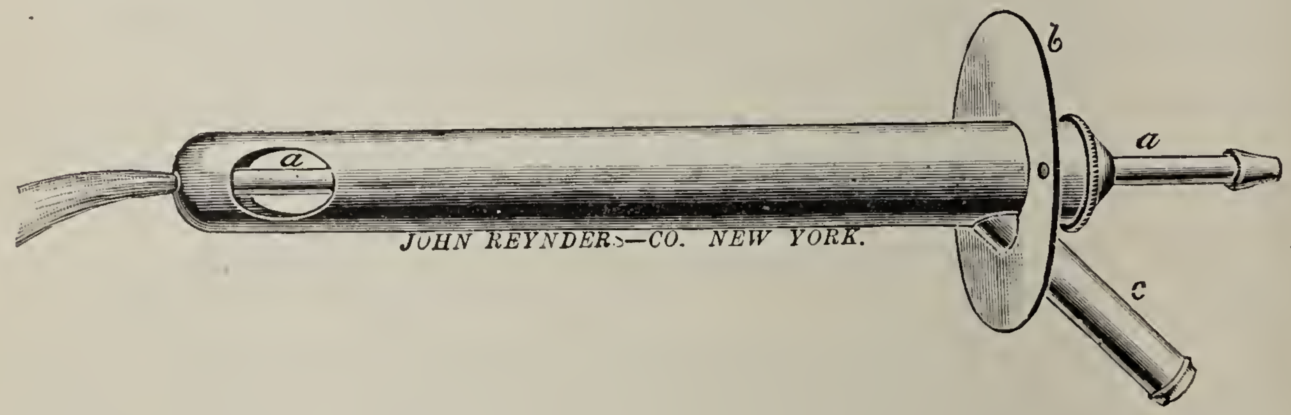
No. 91. Tag 9685. R. S. Fox. Negative throughout.
92. 10222. E. H. Fox. Tuberculosis of pulmonary glands.
93. 9632. R. S. Fox. Tuberculosis of pulmonary glands.
94. 9680. R. S. Fox. Tuberculosis in lungs and pulmonary glands.
95. 9628. R. S. Fox. Mediastinal glands tuberculous.
96. 9644. R. S. Fox. Tuberculosis in lungs and adjacent glands.
97. 9692. R. S. Fox. Tuberculosis in retro-pharyngeal glands, in lungs and adjacent glands; also in liver and adjacent glands.
98. 10238. F. P. Fox. Tuberculosis in head glands, in lungs and pulmonary glands; also in mesentrric glands.
99. 9691. R. S. Fox. Tuberculosis in head and pulmonary glands.
100. 10256. E. T. Fox. Tuberculosis in lungs and pulmonary glands; also in liver and mammary glands.
101. 10269. E. S. Fox. Tuberculosis in glands of head, in lungs and adjacent glands; also in mesenteric glands.
102. 9664. R. S. Fox Tuberculosis in pulmonary glands.
103. 9663. R. S. Fox. Tuberculosis in lung and pulmonary glands.
104. 10294. F. P. Fox. Tuberculosis in head gland, in pulmonary glands and in mesentertc glands.
105. 10259. F. P. Fox. Tuberculosis in pulmonary gland; also in mesenteric glands.

No. 106.	Tag 10271.	Brown.	Advanced tuberculosis in head gland, also in pulmonary glands.
107.	10213.	D. S. Fox.	Tuberculosis in pulmonary glands.
108.	10218.	F. P. Fox.	Tuberculosis in lung and adjacent glands.
109.	9693.	R. S. Fox.	Tuberculosis in left retro-pharyngeal gland
110.	10221.	E. T. Fox.	Tuberculosis in pulmonary glands.
111.	10208.	D. S. Fox.	Tuberculosis in mediastinal glands.
112.	10239.	E. T. Fox.	Tuberculosis in pulmonary glands.
113.	9643.	R. S. Fox.	Tuberculosis in head gland and pulmonary glands
114.	9687.	R. S. Fox.	Tuberculosis in bronchial glands and in portal gland.
115.	10270.	D. S. Fox.	Tuberculosis in head gland, in lungs and pulmonary glands.
116.	10265.	F. P. Fox.	Tuberculosis in lung and adjacent glands.
117.	10217.	F. P. Fox.	Tuberculosis in pulmonary glands and mesenteric glands.
118.	9623.	R. S. Fox.	Tuberculosis in left lung and adjacent glands.
119.	9698.	R. S. Fox.	Tuberculosis in lungs and adjacent glands; also pleura and portal glands.
120.	10277.	E. T. Fox.	Tuberculosis in mediastinal glands.
121.	10266.	E. T. Fox.	A small node in left axillary lymphatic gland; uncertain of its nature.
122.	9610.	R. S. Fox.	Negative throughout.
123.	10219.	D. S. Fox.	Tuberculosis in bronchial glands.
124.	9688.	R. S. Fox.	Right mammary gland tuberculous.
125.	9655.	R. S. Fox.	Tuberculosis in bronchial and mediastinal glands.
126.	9616.	R. S. Fox.	Tuberculosis in lung and pulmonary glands.
127.	10279.	E. T. Fox.	Tuberculosis in lung and pulmonary glands.
128.	9633.	R. S. Fox.	Tuberculosis in pharyngeal glands; also mediastinal glands.
129.	10263.	E. T. Fox.	Tuberculosis in lungs and adjacent glands.
130.	9654.	R. S. Fox.	Tuberculosis in pharyngeal glands, in lungs and adjacent glands.

(*To be continued.*)

RECTAL AND VAGINAL IRRIGATOR.

The accompanying illustration represents a new instrument for irrigating the rectum and vagina, invented by Herbert Neher, D.V.S., the well-known veterinarian, of New York City, and which has been manufactured by John Reynders & Co., of Fourth Avenue.



At our request, Dr. Neher has furnished the following description of the instrument; and he will be pleased to write any of our readers who may desire further information.

The large tube is 12 inches long by 1½ inches in diameter. The large openings at the apex are for exhaust to enter after the fluid has passed through the central tube (*a*). The flange (*b*) rests against the anal rim, and is perforated by an opening on each side, which are for a cord to be tied in, and this cord passes to a surcingle on either side of the animal. (*c*) is the exhaust tube, the fluid passing directly from this to the floor behind the animal, or rubber tubing is attached and the fluid is carried away and floor kept dry. The whole instrument is made of brass, heavily nickel plated, and is so made that it can be taken apart and cleaned in a few minutes.

BIBLIOGRAPHY.

FORMULAIRE DES VETERINAIRES PRATICIENS (Prescription Book for Veterinarians), containing about 1500 Prescriptions, made according to the New Therapeutic Methods, by Paul Cagny, Member of the Société Centrale de Medecine Veterinaire and of the Royal College of Veterinary Surgeons of London. 1 Vol., 300 pages. Published by J. B. Bailliere et fils, 19 rue Hautefeuille, Paris.

In writing this litle book, Mr. Cagny has two objects in view:

1st. To present veterinarians with a *résumé* of therapeutic principles, based upon the recent changes in medical theories during the last few years. As long as methods must follow theories in their changes, the time had arrived in veterinary medicine to publish a prescription book, which would not rest any more on theories considered to-day as erroneous. 2d. To collect in the same chapter all the prescriptions proper for the diseases of a given organ. Thanks to the adopted plan, one can at a glance find the indications for a case of pneumonia or of enteritis, for instance.

The book is divided into 20 chapters, arranged as follows: 1. General therapeutics; 2. Agents modifying the external cause of disease (antiseptics and parasiticides); 3. Those of the digestive apparatus; 4. Of nutrition; 5. Of the blood; 6. Of the circulatory apparatus and of circulation; 7. Of the respiratory organs; 8. Of the nervous system; 9. Of the organs of sight; 10. Of the skin; 11. Of the mammæ and milk secretion; 12. Of the urinary apparatus; 13. Of the genital organs; 14. Therapeutic agents without any special functional action (electricity, hydrotherapy, massage, caustics, astringents, etc.) 15. Poisons and antidotes; 16. Antivirulent medication;

17. Therapeutics of operations; 18. Veterinary posology; 19. Contagious virus used for the destruction of noxious animals; 20. Toxines used for the diagnosis of contagious diseases.

To complete his personal information Mr. Cagny has taken advantage of the researches of the professors of the veterinary schools of Europe and also of the observations published in France and foreign countries.

SIXTH BIENNIAL REPORT OF THE STATE VETERINARIAN OF MICHIGAN, 1895-96. By E. A. A. Grange, State Veterinarian, Lansing, Mich,

The very full and lucid pamphlet bearing the above title comes to us with peculiar force, just at this time, for after scanning the 64 large and compact pages, teeming with the rarest and latest conclusions in modern sanitary medicine, only obtainable by men who are students and trained to study such complex propositions, we are taunted with the reflection that in this age of progress and civilization the trading in politics has caused the displacement of this man to make room for one devoid of these valuable attributes. We know nothing of the personality of the new appointee, beyond the information that he is a non-graduate, and that is sufficient to know that however good a citizen he may be, he cannot be competent to succeed Prof. Grange.

The body of the report is mainly filled by a very full consideration of the subject of tuberculosis in its various aspects, and is a valuable contribution to veterinary literature.

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By W. V. BIESER, D.V.S., New York City.

RESEARCHES UPON THE ORIGIN OF HUMAN DIPHTHERIA FROM POULTRY.—A diphtheria of poultry different somewhat in its clinical aspect from the ordinary diphtheria of poultry, but, on the contrary, said to resemble human diphtheria very much, was dragged into Belgium through the importation of Italian hens and scattered broadcast over the country. The infected animals died in a few hours or at most in a few days of what veterinarians called "catarrhe contagieux." The animals secreted viscid mucous from the mucous membranes of the pharynx, eyes and nose, emaciated rapidly and died very quickly as a rule. The author seems to incline toward the ætiological identity of the disease with human diphtheria for the following reasons: *a*—A few cases of human diphtheria occurring in the families of owners of such infected poultry seem to point to this deduction. *b*—Antidiphtheritic serum seemed to exert a favorable influence upon the diseased poultry. *c*—Through the courtesy of Prof. Ermenghem, he is enabled to report the finding of a short bacillus, identical to the so-called pseudo-diphtheria bacillus, which, however, inoculated into guinea pigs had not the slightest effect upon them. The author considers this bacillus to be an attenuated diphtheria bacillus. His experiments are, therefore, not sufficient or conclusive enough to prove the origin of human diphtheria from an aviary source, although such a transmission is a probable one.—(*Berl. Thierärzt. Woch.*)

KOCH'S NEW TUBERCULIN [*Buchner*].—In the *Münchner Allgem. Zeitung* B says: "Koch's new tuberculin offers better prospects of success than his old tuberculin did, because he was more careful this time and did not, as he did formerly, limit his observations to infected animals merely, but made his observations on infected people also. The method of preparation of the new remedy bids fair to improve the results of its application in proper cases, because the new remedy is an entirely different product from the old one and must, therefore, necessarily give a different reaction. The old tuberculin obtained by the heating of cultures contained inflammatory and fever-producing elements, but not a single substance capable of producing immunization in the living body, as B. and his pupils conclusively showed. In order to produce a better tuberculin it obviously was necessary to obtain the bacillary contents directly and unaltered; the only difficulty lay in the carrying out of this project in the case of such small bodies as the tubercle bacillus. Koch's new tuberculin practically contains the contents of the tubercle bacilli unchanged, which contents, it is to be hoped, will immunize (if not cure) persons against tuberculosis." Koch's Method.—He first dries the tubercle bacilli; they are then finely rubbed; water is then added to obtain the bacillary contents in solution. Buchner and his pupils claim that they can produce a better tuberculin in the following way: Koch claiming that his new tuberculin cannot be improved upon, B. mechanically rubs the living bacilli in the moist (not dry) state with fine sand or gravel in order to avoid the accumulation of dust and then obtains the bacillary contents by means of a pressure of 400 to 500 atmospheres; he presses out the contents;

Koch dissolves them out; he presses out moist bacilli; Koch dissolves out the contents of dried bacilli; both utilize the principle of trituration, however, in getting out the bacillary contents.—(*Berl. Thierärzt. Woch.*)

Brain Abscess in the Horse.—R. was called in to see a horse that ostensibly had been suffering from pneumonia for a week or so. Four days later meningitis was diagnosticated, and ten days later R. narrowed down his diagnosis to an abscess of the brain, situated in the posterior portion of the left lobe and near the surface of the brain, from the fact that there was *blindness* of the right eye. R. threw the horse, opened the skull by making an incision 5 c. m. long, but failed to localize the presumptive abscess. One week later he had the horse killed, and at the autopsy found the left lobe larger than the right and the pia mater congested. Just a few m. m. back of the posterior end of his former incision he detected a yellowish red area unconvoluted, strongly adherent, which yielded 32 g. of pus on incision. He failed to find the abscess during life merely because he hadn't made a big enough incision.—(*Berl. Thierärzt. Woch.*)

Hyperæmia of the Spleen in Sheep as a Means of Diagnosis of Forced Fattening of Animals Before Slaughter.—P. asserts that one finds the spleen enlarged to twice or thrice its natural size in sheep that were fattened before slaughter by an excess of drink or feed, without there being any other visceral changes noticeable. Such being the case, we have undoubtedly to deal with a physiological hyperæmia here which may not necessarily mean a pathologial condition; but it must be admitted that the meat of such sheep is redder in color and does not look as healthy as it should.—(*Berl. Thierärzt. Woch.*)

ENGLISH REVIEW.

Follicular Mange [*By X.*]—In a concise article in the *Veterinary Journal*, the author lays down the following facts: It seems that the disease due to the *demodex folliculorum* is getting more common, the contagious nature of the disease, though not very great, may be a cause of it; the diagnosis of the disease is very simple and ought to be made early; the symptoms consist principally in the appearance of the disease about the head first, then spreading to the fore legs and feet, and the sides, to become generalized to the rest of the body; there is no pruritis, hence no scratching; there are numerous pustules filled with purulent material, which burst and leave red crusts; there is emitted from the body of the animal a very strong, offensive mousy odor. Examinations of the fluid of the pustule with a low power is sufficient to detect the presence of the acarus. The treatment is important, as animals commonly die from it with marasmus. Tar and sulphur preparations with oil are useful—solution of Peruvian balsam in alcohol is preferable to an ointment of the same—liberal diet and tonics internally are also indicated.

UTERINE FIBROUS TUMOR.—Extracted from clinical notes of the Royal Veterinary College of London.—Prof. J. Penberthy records the case of an aged collie bitch which was admitted to the infirmary, the owner complaining of the swollen state of her abdomen. This condition was observed some six weeks previous, and was gradually increasing. As the animal had been in heat several weeks before it was supposed she was pregnant and her fœtus dead. The abdomen large, pendulous and resembles that of a pregnant bitch; a large hard tumor is felt in the position of a uterus, which, perhaps, too smooth to be that organ, has still a certain irregularity, justifying the idea of the presence of pups. General health is good, except difficulty in walking. At one time there was some discharge from the uterus. No signs of ascites. The animal, after much hesitancy on the part of the owner, was destroyed, and the post-mortem revealed a hard, dense tumor, weighing 19½ lbs., occupying the whole of the cavity of the uterus. On section the growth was pinkish-white and proved to be, on microscopical examination, an œdematous fibroma.—(*Jour. Comp. Path. and Therap.*)

TUMOR IN THE BRAIN OF A DOG.—The rarity of neoplasms in the brain of dogs is well known, and very great in comparison with those that are met with in horses. On that account the record in the *Jour. Comp. Path. and Therapeutics* by Prof. J. Penberthy is of unusual interest. The symptoms are described by the author as follows: "On being examined before admission, emaciation was well marked, the temperature normal, pulse slow but regular; the animal, though apparently capable of every movement, walked listlessly and with evidence of great debility. There was a strange, dull facial expression and the pupils were dilated. In the kennel, the sitting posture was generally assumed, the head and nose being directed to the right. As far as could be judged, the animal could see only fairly well, but the hearing was more evidently impaired, and he was not easily aroused by calling. On being offered food, however, the patient readily came for and ate it. During his stay here, the appetite was good and there was no difficulty in swallowing. In the intervals between feeding times, the dog remained usually in one position in a listless state." On a slight supposition that rabies might be developing, the animal was placed under careful observation, but without results, and, after a proper time, a diagnosis of chronic cerebral disease was made and the animal destroyed. At the post-mortem an adenoma, as large as a walnut, was found attached to the vessels of the choroid plexus in the right lateral ventricle.

FOREIGN BODY IN THE STOMACH [*By Mr. W. T. Bolton*].—This is the history of a King Charles spaniel, which had never been sick up to the time he was called. He found that the dog had refused his food in the morning, and all at once commenced to vomit, purge, turn round and round in a circle and go into repeated attacks of convulsions. His breathing was hurried, his eyes staring and rather blood-shot. Removed to the infirmary of the author, he received some sedative medicine and the next morning, being in a dying condition, was given an intrathoracic injection of prussic acid. At the post-mortem a half-ounce weight was found wedged in the pyloric orifice, which it almost entirely blocked. On further inquiry as to the history of the case, the fact became known that some six or seven months previous the dog swallowed the weight, but that, as it did not seem to interfere with him, the accident was all forgotten.—(*Veter. Record.*)

FRENCH REVIEW.

CALCULARY CYSTITIS.—As a sequel of this affection, it is not uncommon to find that the meat of a steer becomes impregnated with an odor of urine which renders it unfit for consumption, even after the animal has been properly treated. Mr. Soulie, in the *Progrès Vètèrinaire*, reports a similar case. A steer suffering with colic was treated by the owner with drenches of stimulant infusions, and to all appearance recovered. Uneasy, however, about his condition, the owner called Mr. S., who, after careful inquiry, finding the animal apparently well, and with the affirmation that the animal had passed urine, concluded it an attack of *cystitis á frigore*, and left, after recommending that the micturation of the animal be carefully watched. *Four days* later he was called again, and told that he had been misinformed; that the steer had not micturated since his sickness. The condition of the animal proved it, his bladder was full, there were no urethral contractions, the hairs at the entrance of the sheath were dry, and at the second curvature of the S of the penis, a calculus was discovered. The animal was operated upon. The calculus was of blackberry form and of the size of a bean. Yet urine was not expelled freely; it was only by slight pressure on the bladder that a small quantity of urine passed through the natural way. The animal being still unable to make water, was killed the next day. At the post-mortem the meat was found having a very marked odor of urine; the bladder, not ruptured, contained a small quantity of fluid; the mucous membrane was inflamed and the meatus closed by a firm exudate, which had prevented the escape of the urine outwards, and yet, by its condition, permitted its infiltration in the tissues.

PREVENTION OF THE UMBILICAL INFECTIONS OF NEW-BORN ANIMALS.—This is the general advice of Prof. Nocard, published in all the veterinary papers, and we believe by governmental direction, as follows: Calves, lambs and young pigs are often affected, a few days after birth, with serious diseases, rapidly fatal; whatever is the seat of the disease, liver, peritoneum, pleura, pericardium, lung, or even the articulations, it has always the same origin: *is the consequence of an umbilical infection*, which takes place, at the time of delivery or shortly after, through the wound, resulting from the rupture of the cord. To prevent the disease, as early as possible after birth, one must: 1st. Carefully wash the umbilicus of each new-born with a fine sponge, sterilized by boiling it in a phenic solution (25 grammes of acid, one litre of water), and which is allowed to cool off until lukewarm. 2d. Dry the umbilicus with the same sponge, well squeezed out. 3d. Apply upon the umbilicus a small quantity of an ointment of vaseline 100 parts, boric acid 15 parts, thymol ½ a part. 4th. Renew the application every morning for five days; at that time the umbilicus will be all cicatrized. At the time of parturition, and for several days following, the bedding of the animals should be kept thoroughly clean, and made with fresh and dry straw.

ITALIAN REVIEW.

SEROTHERAPY IN THE INFECTIOUS PLEURO-PNEUMONIA OF HORSES.—*The Clinica Veterinaria* of April publishes the following interesting notice of experiments made upon a number of horses. 1. The following are taken from these experiments: Fifty horses were submitted to the treatment of serotherapy. 2. From Feb. 14 to March 23 thirty-two animals left the hospital completely cured. 3. Three horses only died during the serotherapic treatment, and of these two were inoculated when already in desperate condition. 4. The fifteen horses remaining under treatment are in good condition and much improved. 5. Sixteen horses, recovered of the infectious pleuro-pneumonia, were bled to obtain the serum. On an average each horse stood three bleedings. 6. The bleeding was made about ten days after the exit of the animal from the hospital. 7. Two litres of blood were extracted at each operation. 8. The highest number of injections required has been seven, the lowest two. The average has been four a day of 100 grammes of serum. The injection was made subcutaneously on the side of the neck, once a day. Nine other injections were also made in fourteen horses at the dose of 50 to 100 grammes by injection.

TETANUS CURED BY PHENIC ACID.—Mr. S. D. Francesco records in the *Clinica Veterinaria* a case of recovery of lockjaw well marked with stiffness of all the muscles of locomotion, contraction of the jaws, stiff ears, nostrils widely dilated, the membrana nictitans appearing suddenly on the eye at the slightest irritation, neck rigid, tail elevated, abdominal muscles powerfully contracted, respiration short and quick, pulse frequent. Temperature 40.5 to 41° C. The entire muscular system is contracted, trismus and pleurosthotonos well-marked. The treatment consisted of tracheal injections of a mixture of 2 grammes of phenic acid with 4 of glycerine and 100 of distilled water, divided in four doses, given one every six hours. Rectal phenicated injections—washes. Improvement was noticed after two weeks and in a month the animal entirely recovered.

ANGIOMA OF THE GLANS PENIS.—The same author records a case of this affection in a low-bred animal which had frequent hæmorrhages through the sheath, and which on examination, exhibited an extensive diseased condition which demanded immediate interference. The animal was cast, secured as for castration, the parts thoroughly cleaned and disinfected with phenol and sublimate. A catheter was introduced in the urethra, and an Esmarch bandage applied on the penis to prevent hæmorrhage. The amputation was made with the ecraseur. The catheter was left in a few days; micturation normal.

FIBROMA OF THE LEFT FLANK OF A HORSE.—The clinics of the Milan School under Prof. Lanzillotti-Buonsanti offer always something interesting, if we can judge by the records which are found in the *Clinica Veterinaria*. Here is one: A horse was brought to that clinic with a tumor existing for some time and little by little increasing; it was attributed to the blows of the spur of the one riding him. This growth, corresponding to the eleventh and twelfth left ribs, was the size of an orange, not very warm, slightly painful, hard, subcutaneous and not adherent by its base. The skin that covered it was sound and free. It was a fibroma, which must be removed. The horse was cast, the skin shaved and thoroughly disinfected, an incision (18 centimetres) made, the cutaneous flaps dissected, the tumor easily enucleated. Some little of the skin had to be excised to permit correct cicatrization. Stitches and drainage tubes were applied. Recovery took place in twelve days by first intention. The microscopic examination confirmed the diagnosis—a fibroma with limited calcareous infiltration.

Fungoid Growths of Enormous Dimensions on Both Spermatic Cords of a Horse.—This is another from the Milan Clinic: A four-and-a-half-year-old, of low breed, was unable to work because of its condition. On the right as well as on the left scrotal region there was a very large swelling, with an ulceration on its centre, which permitted the introduction of the probe, several centimetres in depth. These tumors were about the size of a child's head each. The scrotum was infiltrated and adherent, the prepuce was œdematous. To be operated upon the horse was cast, put in dorsal position, Degive's method. After thorough disinfection, the right tumor was first operated upon. Dissected and isolated from the skin with the bistoury, the blunt ends of the scissors, the fingers, the healthy extremity of the cord was easily secured, with a strong ligature, as the tumor was entirely extra-inguinal. It was excised. The edges of the skin brought together and a drain tube put in place. Similar operation was made on the opposite side. Abundant irrigations of sublimate solution in the wound, on the skin and sprays of ethereal solution of iodoform. In eight days the drain-tubes were removed. Cicatrization by first intention was complete in eight days on the left side. On the right there remained but two little cutaneous sores on the edges of the wound. In thirty days recovery was complete. The two masses were of sarcomatous nature, the presence of the *discomyces equi* could not be detected.

Rays in X and Experimental Tuberculosis.—Doctors

Fiorentini and Luraski have experimented on guinea-pigs inoculated with cultures of human tuberculosis. In a first series six animals were used, three inoculated, three witnesses. Submitted to the Roentgen rays during an exposure of forty minutes every day, it was shown that, when applied for eight consecutive days, it had arrested the development of the tuberculous process. In a second, the authors used stronger cultures. Two pigs received one cubic centimetre, and eight half of a centimetre. One of each division was submitted to the rays; the others were kept as witnesses. All of those last died with tuberculosis in a length of time varying between fifteen and thirty days. Of the other two, the one which received one cubic centimetre of culture was submitted to the rays every day for twenty-three days. After fifty-three days, much emaciated, he was destroyed and presented lesions of chronic peritoneal tuberculosis. The other, which had received half a cubic centimetre of culture, was submitted to the rays ten days after the inoculation, when he already presented a large tubercle at the point of inoculation, and signs of failing and loss of flesh. With the rays, the ventral nodosity disappeared, the animal increased in weight and is now in good condition. He was exposed for twenty-five days, forty minutes at each exposure. The authors, in conclusion, say that they cannot explain the beneficial influence of the X rays upon the tuberculous organism, but are satisfied in confirming by their experiments the results already obtained in France in the attempts made on their application to the treatment of the disease in man.—(*Giornale della Real. Soc. Veter.*)

BELGIAN REVIEW.

Pelvic Abscess in a Horse.—This lesion is not uncommon, sometimes very troublesome, in some instances fatal. The favorable end met by the patient of Mr. Verlinde, which is published in the *Journal de Bruxelles*, is very interesting. A horse was stopped from working for lameness of the right hind leg. The leg was swollen, hot and painful in its upper regions. The anus was prominent, deviated to the left; the animal moved with difficulty; the right hind leg had very limited motion; the tail was carried to the left. Defecation was difficult and painful, fæces small and maculated with pus. By rectal examination the size and location of the abscess were well made out. Rectal injections, emptying of the abscess by enlarging the fistulous tract it had in the rectum with the finger and with the lancet, washing of the cavity with sublimate injections was the treatment prescribed, and followed by apparent recovery after about four weeks. This was, however, only temporary, as after about the same length of time, all the symptoms returned, but less severe than before. The abscess had evidently refilled. This attack was relieved after a few days and the animal remained well for over three months, when he was again laid up, always for lameness of the right leg. This time no indication of rectal trouble could be discovered, the abscess of the rectum was all closed, but on the external face of the shank there was a big swelling, which increased daily and ultimately fluctuated. The abscess was opened, treated antiseptically and the patient was at last radically cured.

PROLAPSUS UTERI AND ITS TREATMENT.—A NEW APPARATUS.—Everyone knows how this diseased condition of our domestic females are troublesome and how severe the prognosis sometimes becomes by the difficulties that are present in the manipulations of reduction. When it is considered that mortalities of 68 per cent. in mares and 35 per cent. in cows are recorded, it is not surprising that the working practitioner is searching means which will give him better and more easily obtained results than those commonly in use, advantageous and successful as they have proved in some instances. It is to that effect that Mr. L. P. Gobbels has invented a new apparatus, very simple, and which at first reading seems to answer all cases. It consists in two bags of rubber or impermeable structure, placed one inside of the other, most *tightly* united together at their free border. They must be of sufficient dimensions to permit the reception of the protruding mass. The outside bag is made of thick, unelastic tissue and carries a little facet at its bottom. The inside bag is made of thin and yielding structure, slightly elastic, to stretch somewhat under the pressure applied upon it. This double bag is closed by a running string passed round its open mouth; on the circumference of this mouth are rings to carry ropes to hold the instrument when in place. The facet at the bottom of the outside bag is connected with rubber bellows (elastic bellows of an atomizer or an apparatus of Richardson). The use of the instrument is simple. The protruding organ is placed in the cavity of the inside bag, and the running string gently tied keeps the instrument steady; while with ropes starting from the rings of the circumference of the bag and passing on the flank, between the hind legs, over the back, to a surcingle or collar, it is kept in position. Then by filling the space between the bags, with air, (using the rubber bellows) or with liquid, the soft inside structure is pressed against the protruding uterus ; it pushes it back, slowly, evenly, from all sides, in every part, until without effort, struggle, injury of the membrane and without excessive work on the part of the obstetrician, the organ returns of its own accord, as it generally does when the reduction has reached a certain point.

PANCREATIC DIABETES IN A DOG.—Guided by the discoveries of Von Nering and Minkowsky and those of Chauveau and Kaufman, in relation to the influence of the removal of the pancreas and the action of the secretion of that organ in the peculiar function of glucose formation, Professor Lienaux, of Brussels, has published in the *Annales* the record of a post-mortem which shows that clinical observations in veterinary medicine can be found, as well as in human, confirming the correct demonstration of Von Nering and Minkowsky. The case was that of a little slut which presented all the evidences of diabetes glucosuria, polyuria, polydipsia, polyphagia, autophagia. Nothwithstanding much care and selected diet she died in a most emaciated condition. The lesions of the liver were large and yellow ; the pancreas difficult to find and is reduced to the size of a short cord, about 3 centimetres (instead of 20 to 40, the normal length), the cord is hard, of a dull white color and seemed to be part of the intestines. The kidneys presented nothing very particular ; their capsule opaque, not adhering ; the tissue proper pale. The microscopic examinations of the pancreas revealed all the characters of atrophy with epithelial degeneration.

SOME REMARKS UPON ANÆSTHESIA OF HORSES.—Prof. Hendricks, in the *Annales de Bruxelles*, after considering the various modes of obtaining anæsthesia in solipeds and of alleviating the sufferings of animals during operation without placing them under complete anæsthesia ; also after observing how dangerous the administration of ether or chloroform may prove on account of the violent struggles of the animal during its administration ; and how he has tried to prevent these or guard against their severity, records a mode of administration, to produce partial anæsthesia, which permits him to perform mild operations, or prevent the severe struggles of the animal. To this effect he places a large muzzle on the horse's nose ; a thick sponge is at the bottom of it, chloroform is poured on it, little at a time and by degrees, sufficient anæsthesia is produced to permit the complete manipulations of casting without struggles and fear of accidents. [If our memory serves us right, this is a means which has already been tried. We personally made several attempts, but did not find the result as satisfactory as we expected.—A. L.]

PULMONARY EMPHYSEMA—ITS TREATMENT.—Mr. G. Gendens relates the good results he has obtained in two cases of this affection, where the symptoms were of such severity that the animal was entirely unfit and unable to work. After using the old treatment of progressive doses of arsenious acid without any good result, he had recourse to the preparations so frequently used by the advocates of dosimetric medicine, and thus administered twice a day a pint of beer containing three centigrammes of arseniate of strychnia, twenty-five centigrammes of arseniate of iron, two grammes of iodide of potassium. With this he recommended good hygienic measures and repeated frictions on the body. The improvement was quite marked in a week, and in two months recovery was complete.—(*Annales de Medec. Vet.*)

AMERICAN REVIEW.

CAT WITH TWO SPLEENS [*By James M. Richardson, New York*].—A cat had not eaten for three or four days. A diagnosis of duodenal obstruction was made, and warm enemas and castor oil administered. Six days later patient died in great agony, and post-mortem revealed a second spleen, which had been mistaken for obstructing body. It was surrounded by a mass of adipose tissue suspended in the mesentery of small intestines, and weighed three and a quarter drams. No abnormal changes in any other organs except a number of small ulcerations throughout small intestines.—(*Jour. Comp. Med. and Vet. Arch.*)

TRAUMATIC PERICARDITIS IN A COW—RECOVERY [*By Prof. W. L. Williams, Ithaca, N. Y.*].—The author narrates that in January, 1896, he attended a cow for tympany of moderate character, accompanied by painful respirations, grunting during expiration, with general stiffness and disinclination to move, which led him to suspect the ingestion of a pointed foreign body. After puncturing rumen, saline purgatives and carminatives were given, followed by apparent recovery. In four weeks he was again called, when the following symptoms presented themselves: Dullness, stiff, disinclined to move, feverish, dry muzzle, inappetence, tumultuous pulse (intermittent and irregular), with abnormal pericardial sounds. Referring to former attack, diagnosis of traumatic pericarditis was made and an unfavorable prognosis given. Small doses of digitalis three times daily was the treatment, and in a few days improvement was marked, appetite returning, fever abating, movements more free, and milk flow increased. In the following June on reëxamination found a prominent tumor beneath and to right of sternum, in the angle formed by the ensiform and last costal cartilages. On opening a pint of grayish, very fœtid pus escaped, and exploration of the cavity with the finger brought forth two irregular pieces of bone, resembling much a portion of the bone from a porterhouse steak, and as the cow had been continually fed upon kitchen scraps, it seems quite certain that a bone had in this manner been swallowed, inducing the indigestion first noted, penetrated the rumen, passing forward to the right posterior surface of the pericardium, after which it traveled to the right and downward, emerging partly decomposed at the point described.—(*Jour. Comp. Med. and Vet. Arch.*)

TETANUS IN A CAT [*By Dr. Otto Noack*].—Castrated June 5th, and on 14th showed stiffness of limbs, tail stiff and carried upwards, moving around with great difficulty; two hours later stiff all over; ears stiff and drawn together; skin between them drawn in folds; unable to move; could be taken up and put down like a wooden block; if placed on side no movement could be seen. Later in day trismus complete, unable to swallow, death occurring same evening.—(*Jour. Comp. Med. and Vet. Arch.*)

INTESTINAL HERNIA THROUGH GREAT OMENTUM IN A COLT [*By Dr. Geo. P. Tucker, Lincoln, Neb.*].—A yearling colt, presenting symptoms of digestive derangement for six to eight months, gradually increased until death from starvation. Autopsy revealed a loop of intestines about twelve feet from stomach which had perforated the great omentum and rolled on itself, forming a fibrous ring two inches thick surrounding the loop, so there was very little if any free portion of the omentum. Anterior to the loop the intestines were hypertrophied, and at the loop a cavity had formed as large as the stomach. Posteriorly the intestines were of normal size, with merely a peculiar mottled appearance.—(*Jour. Comp. Med and Vet. Arch.*)

SUBCUTANEOUS INJECTIONS OF IODINE FOR SPAVIN AND RINGBONE.—In a pamphlet edition of the proceedings of the last annual meeting of the Manitoba Veterinary Association Dr. Spiers, of Virden, reports that he had read, some two years previously, in one of the veterinary journals, an article on the treatment of ringbone and spavin by hypodermic injections of iodine. He has since tried the treatment in 10 or 12 cases and in every instance has effected a cure, so far as stopping the lameness is concerned. His method is to cast the horse in the usual way, and in case of spavin, inject about two and a half drachms of B. P. preparation in three or four different places a little above the seat of disease, so that it has a tendency to run down. There is less suffering than from blistering, and there is no suppuration following. Thoroughly cleanse and disinfect the needle, make the injections and allow animal to get up, the operation requiring no after treatment. It is recommended to have a large syringe, holding half an ounce, injecting once over the enlargement, and the other three a little above it. He has not found it necessary to repeat the treatment, and the patient should be laid up for three or four weeks, longer if possible.

COLLEGE ANNOUNCEMENTS.

AMERICAN VETERINARY COLLEGE.

The twenty-third annual announcement of this college for the session of 1897–98 is received, and is a neat little pamphlet of 55 pages. It is in the nature of an innovation, in that it contains the most complete record of its graduates that we have ever seen attempted, giving the full name of the alumnus, date of graduation, address, and the history of his career, so far as it refers to positions in educational institutions, national, State, and municipal governments, authorship of works bearing upon the profession, etc. With the close of the last session it had made the record of an even 600 graduates, and their history as detailed in the roster is an everlasting monument to the wonderful work which it has accomplished in distributing throughout the country so many men who have made their marks in the profession of their espousal.

The announcement devotes three pages of instruction to applicants for matriculation and admission, which has been carefully prepared and approved by the Board of Regents of the University of the State of New York.

The course is not materially changed from last year, and the governing faculty remains the same. In the adjunct faculty Dr. W. S. Gottheil has retired from the chair of Surgical Pathology and Practical Microscopy, and H. B. Ferguson, Ph. G., Phar. D., has been added as an adjunct to the chair of Botany.

NEW YORK STATE VETERINARY COLLEGE.

The second annual announcement of this college is received, and is probably the most exhaustive of a veterinary institution that has ever been issued in this country, covering every detail of information in reference to the administration officers, faculty, directory of the college, its foundation and objects, description of the buildings, admission under all circumstances, requirements for graduation, a schedule of the course of instruction, with a description of the various departments taught and the facilities for instruction, as well as many other details of interest to intending matriculants, including an appendix, in which are detailed the legal requirements of preparatory and professional study for graduation in veterinary medicine in New York State and the requirements for license to practice. The announcement contains many well-executed illustrations, chief of which is a new full view of the main building of the veterinary college, Morrill Hall (breeds and breeding), Moore Hall (chemistry), Dairy building, Law School and Library, a view of Cornell University and Cascadilla Bridge looking north, and another view looking south from the library tower, as well as the plans of the different floors of the veterinary college. The only changes in the faculty since the last announcement are the addition of Prof. Walter L. Williams, as Professor of the Principles and Practice of Veterinary Surgery, Zoötechny, Obstetrics and Jurisprudence, and Edward L. Moore, B. S., as demonstrator of Veterinary Anatomy.

UNIVERSITY OF PENNSYLVANIA—VETERINARY DEPARTMENT.

The thirteenth annual announcement and catalogue of this institution is before us, and gives full information of every detail that can interest prospective students. There are no important changes in the teaching or governing faculties, ecxept the addition of Herman A. Christmann, V. M. D., as assistant demonstrator of veterinary anatomy. A comprehensive list of the members of the various classes shows that there were in attendance during the last session 50 students, 19 being of the third year, 16 of the second, 13 of the first, and two special students. An exhaustive description of the methods of teaching the various branches occupies the main part of the pamphlet, while the latter pages are full of details of interest to those interested. Half-tone views are given of the veterinary hall and hospital, the lecture and operating rooms, and the hospital for dogs and small animals.

CORRESPONDENCE.

SALES OF VETERINARY DEGREES—PROF. LAW EXPLAINS.

New York State Veterinary College,
Cornell University, Ithaca, N. Y.
July 8, 1897.

Editors American Veterinary Review:

Dear Sirs:—When the February issue of the Review called upon me to name the veterinary colleges which had sold their degrees, I did remain "silent" out of consideration for the senior editor, who was not only cognizant of the vile transactions, but who twenty years previously had made precisely the same charges which I have been blamed for making in my address. I considered that it would have been uncomplimentary and discourteous to the senior editor to rush into the gap in his defense and my own, when he could so easily put the whole matter right by quoting his own words of so many years ago. But, now that the call is reiterated, permit me to quote the words of the editor in the first issue of the American Veterinary Review, January, 1877, page 10:

> "In 1866, the Pennsylvania College of Veterinary Surgeons obtained its charter, and issued its first circular with the faculty organized as follows:—
>
> Isaiah Michener in the Chair of Theory and Practice,
> R. Jennings, " " " Pathology and Surgery.
> W. R. Birch, " " " Materia Medica and Pharmacy,
> J. M. Corat, " " " Anatomy and Physiology,
>
> and with a corps of Clinical teachers (J. B. Raynor and T. J. Corbyn)."
>
> "But, like Massachusetts, this school was doomed to no real existence—like her also, it was a school only in name, she had no building, no college proper; I am not sure that regular lectures were ever given, though they had use of the rooms of the Agricultural Society. But, nevertheless, we meet with many diplomas granted from that school, which, like a few headed Boston Veterinary Institute, have been unjustly and illegally granted and may be considered worthless."

If the Review of to-day or any veterinarian who is too young to recall the events of that time, should desire any further information, he will find it in the later columns of the same journal. As examples may be quoted "*Philadelphia Veterinary Diploma Shop*," 1877, page 291, and "*Correspondence*," 1877, 301.

It is not the director of the New York State Veterinary College alone who is called in question, it is also the American Veterinary Review and its senior editor. Nor is the subject a mere matter of opinion. The facts are established beyond all dispute.

The unbiased reader of my address must have noticed that "*surviving and honorable*" colleges were carefully excluded from the charge of selling diplomas. "*But short of this*" (the sale of degrees) "*even the surviving and honorable colleges have been one and all prevented from achieving the status which the nature of the subject demanded.*"

The REVIEW deserves the highest praise for the stand it took in 1877 in holding up to obloquy the prime actors in these nefarious transactions. Under similar circumstances I would confidently look to the REVIEW to once more rise in its indignation and denounce the wrong. But why that which is commendable in the REVIEW should be felt keenly when expressed by me, it remains for my critics to make plain.

JAMES LAW.

"THE FUTURE OF THE VETERINARY PROFESSION."

Editors American Veterinary Review:

In the last issue of the REVIEW appeared an article by Dr. E. L. Volgenau on "The Future of the Veterinary Profession," which is such a pessimistic prophecy that the more weakly inclined among us may well be excused for deserting our ranks in wholesale numbers. As I greatly dissent from the views presented, believing as I do in a better future for the American veterinary profession, I shall briefly review the situation from a contrary standpoint.

No doubt it gives great pleasure to the older members of the profession, who have helped to fight the battles of progress during the last ten or twenty years, to see growing up a younger and perhaps better generation in whose hands they can ultimately lay the destinies of the profession when fate shall call a halt to their labors. Thus we appreciate their attempt at independent thought in speech and writing. But these recruits will not come from the ranks of the doubters or the discontents, or from those restrained by self-interest or by self-admiration; they will be those young men who are enthusiastic about their calling, who find satisfaction in their professional work without always counting the dollar, who are unselfish enough to consider the needs of others in a common cause; they will be those few who can lift their minds above their limited surroundings, and look upon things present and future with hopeful calmness and courage.

Such men will not worry about the bicycle and the horseless carriage, new contrivances which have only a limited usefulness. We find the bicycle principally in the households of the middle classes, who could never have afforded a horse or a very cheap one. To these people the bicycle is a means of ready and convenient transport to business, or a vehicle of pleasure by supplying a much-needed exercise in fresh air which they could never have received in any other way. We also find this machine in the barns of the wealthy alongside the carriage, the runabout or the family surrey, used for an occasional spin in the park. This observation shows that the bicycle has only superseded one kind of horse: the very cheap buggy-horse of the livery type. And it is well that it is so, for this horse was never much of an object of veterinary treatment, but rather of humane sympathy; an infirm, over-driven animal, tortured by those men and women who have to get rid of their surplus energy by over-exertion of some kind. For these people the bicycle, this lifeless machine, is just the thing. It produced the "scorcher," this new human fiend, who fears neither God, man, woman, child, beast nor the devil. Whenever I cross a scorcher on an open road I say "go ahead," for I would rather see him taking off the flesh from his own ribs than from those of an innocent driving-horse or saddler. Beyond these uses the bicycle has no others, for on bad roads and in bad seasons it is a nuisance. To be sure, enthusiasts claimed everything for it, and not long ago a United States infantry officer predicted that it would supplant the cavalry horse in future warfare. Yet the bicycle-corps lately organized in the Græco-Turkish war were easily routed by the Turkish cavalry and had to be disbanded forthwith.

The other modern invention, the so-called horseless-carriage, remains an experiment, or, rather, a "plaything," as styled by a recent writer in the *Engineering World*. He points out that the time of its operation is limited, that its motor-force is weak and that on poor roads these vehicles become unmanageable. He concludes by saying that the science of mechanics is far away from having solved the problem of producing and storing motor-force in railless vehicles in such an economic manner as is exhibited by the living horse. If their own scientists acknowledge their failure to construct a machine which will be a substitute for the traction-power of the horse, the life-tenure of this vehicle will be of short duration, or at least its application will be limited by its own shortcomings.

The depression of the horse-market which we have experienced during the last few years is a purely local condition confined to the United States. If Dr. Volgenau says that "from the four corners of the earth come reports of veterinarians taking up other professions or trades," his geography must be limited to the States. For more than twenty years I have followed the workings of the veterinary profession on the continent of Europe, and from there, from Japan, from far-off Africa—these corners of the earth—come the news of a steady growth in the application of veterinary medicine and the general well-being of the profession. In the United States, too, the veterinarian has fared well for many years, although none has developed into a millionaire; only since the panic of 1893 has he suffered, but not much more so than other professions or those engaged in industry and commerce. No other cause can be found for all this than the "hard times" which have befallen our country, as it is easily proven by comparison with the active life of other nations. In England and Germany factories are working overtime, in the United States they are run with a limited force or entirely closed. In England and Germany horses bring higher prices to-day than they have for twenty-five years; in the United States common horses are sold for less than it costs to bring them up. It is as a United States Senator remarked to me not long ago: "Doctor, in this great country of ours it is either feast or famine!" If this is so the famine will vanish, the rays of better times will gradually appear on the firmament, and the American horse, bred more judiciously, and the American veterinarians, educated more thoughtfully, will yet have their feast.

But, agreed that the use of the horse should become limited, is veterinary medicine to become extinct? Dr. Volgenau himself does not believe this, for he admits that "as long as the cattle, sheep and hog interests of the country are of such magnitude there will always be a demand for veterinarians," and he also admits "that there will always be a demand for educated veterinarians as their field for usefulness broadens." What, then, makes him come to the conclusion that "if the bicycle has come to stay veterinarians will soon have to seek new fields and other methods of earning a livelihood." Surely the doctor has his observations and conclusions mixed up in a somewhat unphilosophical manner.

When the doctor further says that veterinarians are leaving the profession, he is correct. And I say: let them go! A year ago I met a former colleague who was running an elevator, another renewed his acquaintance with me while he was shingling a roof of a cottage, a third is a street-car conductor. All honorable occupations in their way! But these three men were of limited education, all three were graduates from a short-term college which has frequently claimed to be the most successful on the continent of America. Yes, the hard times, and the bicycle and the horseless carriage, if you want, have done their ruthless sifting among its offspring, and the time is coming when this college may fittingly write above its doors the classic proverb, modified for the occasion: *Sic transit gloria collegii!*

The doctor concludes his article by saying that in the future "it will not be what we can do but what we know!" I heartily wish it would be that way as I am one of those who find happiness in the pursuit of knowledge. But my experience has been the other way. In a profession so practical as ours, and in a country so commercial as ours, knowledge has no intrinsic value unless it can be applied with a direct and benefiting result.

To sum up, I will say: I don't believe that any invention of man is threatening the existence of the horse, this marvelous handiwork of creation; I don't believe that professional veterinary work will ever reap millions nor that pure veterinary knowledge will be adequately esteemed and rewarded by American institutions. But I do believe, that the heavy depression, the cruel ups and downs which many of us have experienced during the last few years will have a most wholesome effect, as they were a natural reaction against a too sudden rise of the American veterinary profession, unprecedented in the veterinary history of any other country. I do believe that young men with blood of decent ancestors in their veins, who are bright and well educated, who love the horse, the dog and the animal creation, should find the veterinary profession the most sympathetic. And I do believe that the proper growth of the American veterinary profession is yet to come, that if the time is ripe the right man will find the right place, be it as a practitioner, as a sanitary inspector, as experimenter or teacher, and that in time not distant he will again receive such pecuniary reward as to enable him to live an honorable and useful life.

OLOF SCHWARZKOPF.

SOCIETY MEETINGS.

UNITED STATES VETERINARY MEDICAL ASSO'N.

THE LITERARY PROGRAMME.

We present below a revised list of the papers to be presented at the Nashville meeting, corrected by Secretary Stewart up to July 24th, and we submit that it is a brilliant array of subjects and authors:

Dr. Leonard Pearson, "The Disposition of the Flesh of Tuberculous Animals."

Dr. T. D. Hinebauch, "The Action, Experimentally, of Tuberculin on Healthy Animals."

Dr. Chas. Ellis, "Our Milk Supply."

Dr. E. A. A. Grange, "Infectious Mammitis in Cows."

Dr. A. Youngberg, "Malignant Catarrh of the Ox."

Dr. J. W. Connoway, "Texas Fever Investigation."

Dr. Leonard Pearson, "A Review of the Field of Veterinary Science."

Dr. C. C. Lyford, "Radical Operation of Contracted Hoof."

Dr. M. E. Knowles, "Some Diseases of the Horse Peculiar to the Mountain Region."

Dr. W. H. Dalrymple, "The Veterinary Field in the South."

Dr. E. P. Niles, "The Necessity of Veterinary Instruction in Medical Colleges."

Dr. George N. Kinnell, "Bacteriology."

Dr. Wm. Dougherty,———(subject not yet stated).

Dr. S. J. J. Harger, ——— " " "

Dr. C. A. Cary, ——— " " "

COMMITTEES FOR 1897.

Executive.—W. Horace Hoskins, 3452 Ludlow St., Philadelphia, Pa. (Chairman); Leonard Pearson, 3608 Pine St., Philadelphia, Pa.; D. E. Salmon, B. A. I., Washington, D. C.; N. P. Hinkley, 359 Ellicot St., Buffalo, N. Y.; L. H. Howard, 67 W. Newton St., Boston, Mass.; W. L. Williams, Ithaca, N. Y.; C. A. Cary, Auburn, Ala. Ex-officio.—F. H. Osgood, Roscoe R. Bell, M. R. Trumbower, M. Stalker, S. Stewart and Jas. L. Robertson.

Local Arrangements.—W. C. Rayen, 529 Broad St., Nashville, Tenn. (Chairman); J. W. Shiebler, 312 3d St., Memphis, Tenn.; C. A. Cary, Auburn, Ala.; W. H. Dalrymple, Baton Rouge, La.

Finance.—W. Horace Hoskins, 3452 Ludlow St., Philadelphia, Pa. (Chairman); Jas. B. Rayner, 135 E. Gay St., West Chester, Pa.; S. Stewart, 7½ S. James St., Kansas City, Kans.

Publication.—W. L. Williams, Ithaca, N. Y. (Chairman); N. P. Hinkley, 359 Ellicot St., Buffalo, N. Y.; S. Stewart, 7½ S. James St., Kansas City, Kans.

Army Legislation.—J. P. Turner, Fort Meyer, Va. (Chairman); J. R. Hart, 2577 Amber St., Philadelphia, Pa.; Austin Peters, 40 Water St., Boston, Mass.

Pasteur Monument Fund.—D. E. Salmon, B. A. I., Washington, D. C. (Chairman); L. Pearson, 3608 Pine St., Philadelphia, Pa.; M. Stalker, Ames, Ia.

Incorporation.—A. W. Clement, 982 Cathedral St., Baltimore, Md. (Chairman); C. P. Lyman, 50 Village St., Boston, Mass.

Resolutions.—Leonard Pearson, 3608 Pine St., Philadelphia, Pa. (Chairman); W. Horace Hoskins, 3452 Ludlow St., Philadelphia, Pa.; F. H. Osgood, 50 Village St., Boston, Mass.; S. Stewart, 7½ S. James St., Kansas City, Kans.

Intelligence and Education.—H. D. Gill, 154 E. 57th St., New York, N. Y. (Chairman); T. B. Rayner, 135 E. Gay St., West Chester, Pa.; Olof Schwartzkopf, Flushing, N. Y.; W. B. Niles, Ames, Ia.; W. H. Dalrymple, Baton Rouge, La.

Diseases.—Theobald Smith, Boston, Mass. (Chairman); Cooper Curtis, Moravia, N. Y.; E. P. Niles, Blacksburg, Va.; R. R. Dinwiddie, Fayetteville, Ark.; J. B. Paige, Amherst, Mass.

Resident State Secretaries.—See May REVIEW, page 138.

Dr. W. C. Rayen, Chairman of the Local Committee of Arrangements, has kindly furnished the REVIEW with the following

PROGRAMME OF ENTERTAINMENT.

Headquarters,—Tulane Hotel.

First Day.

Address of Welcome, by Hon. Jno. J. McCann.

Response, by President of the Association.

Business of the Association.

Ladies taken in charge by Local Committee, visiting Centennial in a body.

Second Day.

Morning.—Ladies visit Capitol, Phillips & Buttorff Manufacturing Company and other places of interest.

Afternoon.—Both Ladies and Gentlemen congregate at Union Depot for trip to Belle Meade. Returning at night, stop at Exposition.

Third Day.

Go as you please for gentlemen.

Ladies visit Exposition and take trolley ride around the city.

Banquet at Tulane.

Other attractions are under consideration, but have not matured sufficiently for announcement.

TRANSPORTATION INFORMATION.

The following letter to President Osgood is full of information for the New England members:

I submit to you herewith rates *via* M. & M. T. Co., Boston to Nashville and return;

tickets on sale Tuesdays and Thursdays, good fourteen days in addition to date of sale, $32.55. Tickets on sale daily, good twenty-four days, in addition to date of sale, $38.05. These rates include meals and state room accommodations on M. & M. T. Co.'s steamer. Upper-deck state room berths are $2.50 extra in each direction. The steamer leaving Boston Thursday, September 2d, at 2 P. M., is due at Norfolk at 4 A. M., September 4th. Train *via* Southern Railway leaves Norfolk at 9.25 A. M., due in Nashville at 1.35 P. M., Sunday, September 5th. We are the only line running through car service from Norfolk to Nashville, and pass through the most beautiful scenery of Western North Carolina, "The Land of the Sky," thence *via* Knoxville and Chattanooga to Nashville.

President Osgood furnishes the following information: Through tickets can be secured in New York on Tuesdays and Thursdays, good to return within ten days for $25.30. Sleeping-car rates are as follows: Berth New York to Nashville, $6; section New York to Nashville, $12; berth Washington to Nashville, $5; section Washington to Nashville, $10; berth Norfolk to Nashville, $5.50; section Norfolk to Nashville, $11.

A twenty-day ticket from Washington to Nashville is $21.05, but a ten-day ticket is sold on Tuesdays and Thursdays for $15.30.

NOTES.

No reason is left for doubt that our Southern friends are going to entertain us most royally.

The Hotel Tulane is new and up-to-date, having assembly and committee rooms, and every convenience. Rates will be $1 per day and upward for rooms per individual. Meals on European plan or fifty cents straight.

Dr. Nelson, Pullman, Washington; Dr. M. E. Knowles, Butte, Mont., and Dr. T. D. Hinebauch, Fargo, North Dakota, are coming from the Far West, and Minnesota will send a strong delegation.

The New England members will go largely by boat from Boston via the M. & M. T. Co. to Newport News, and thence by the Southern Railway through the most picturesque country to Nashville. It will be a most delightful pleasure excursion.

Cornell will be well represented by Profs. Law and Williams.

All the principal railroad lines give special excursion rates to the Nashville exposition. Round trip sold on any day at eighty per cent. of regular price and on special days (Tuesdays and Thursdays—for ten and fifteen day limit) at much less.

Dr. W. C. Rayen, of Nashville, Tenn., writes the REVIEW as follows: "I am gratified to inform you that Southern practitioners are quite enthusiastic over the approaching meeting, and I now confidently expect that we will have a larger attendance than we had at Buffalo last year."

Drs. C. A. Cary, of Alabama, and W. H. Dalrymple, of Louisiana, have been added by President Osgood to the local committee of arrangements.

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

The annual meeting of this society will be held in Syracuse on Sept. 14th and 15th, and, although the programme is not yet completed, it bears evidence of being one of interest and profit. Those two sterling workers—President Hinkley and Secretary Morris—are now busily engaged in putting the finishing touches on the details, and all members may go to the meeting with the assurance that it will be up to the standard in all respects. President Hinkley writes us under date of July 19th as follows: "From all indications I expect to see a very largely attended meeting, and one of more than ordinary interest to all of the profession."

Prof. James Law, of the New York State Veterinary College, will read a paper on "How to Prepare Contagious Products for Shipment to the Bacteriological Laboratory."

Prof. Roscoe R. Bell, of Brooklyn, has promised one on "Infectious Catarrhal Fever of Horses."

Dr. Geo. H. Berns has a postponed paper from last year on "Osteo-Porosis," and others are awaiting final announcement.

The REVIEW for September will contain the completed programme.

MISSOURI VALLEY VETERINARY ASSOCIATION.

The third annual meeting of the Missouri Valley Veterinary Association was held in Kansas City, Mo., June 9, 1897.

The meeting was called to order by President Dr. Stewart.

The Secretary, Dr. Hunter, being absent, Dr. Schaffter was elected Secretary *pro-tem.*

The first order of business was roll-call, the following members responding: Drs. Stewart, Bray, Moore and Schaffter. Members of the profession present were Drs. Heck, Steddom and Johnston.

The minutes of the February meeting were read and approved.

Correspondence between the Secretary and Dr. T. J. Turner was read, which requested his release from the association, on account of his inability to attend meetings, being located at Indianapolis. Upon motion, duly seconded, Dr. Turner's resignation was accepted.

Applications by Drs. Heck, Johnston, and Steddom were made for membership. The Board of Censors reported favorably upon the petitions, and, upon motion, duly seconded, they were declared elected members.

The President was authorized by the members to appoint a delegate to the United States Veterinary Medical Association, meeting to be held at Nashville, Tenn.

Dr. Moore read a paper on "Puncturing for Gastric Flatulence," which elicited a full discussion by all present.

Dr. Bray volunteered a talk on "Uses and Abuses of the Actual Cautery." A general discussion followed.

Election of officers for the ensuing year resulted as follows: President, Dr. S. L. Hunter; First Vice-President, Dr. Moore; Second Vice-President, Dr. McCurdy; Secretary and Treasurer, Dr. E. P. Schaffter. Censors—Drs. Heck, Johnston, Steddom, Black, and Bray.

Upon motion, duly seconded, the meeting adjourned to meet in Kansas City, Mo., in October.

E. P. SCHAFFTER, V. S., *Secretary.*

THE ASSOCIATION OF VETERINARY FACULTIES OF NORTH AMERICA.

The fourth annual meeting of the Association of Veterinary Faculties of North America will be held in connection with the United States Veterinary Medical Association, at Nashville, Tenn., Wednesday, September 8th, 1897. The following papers will be read:

"Uniform Courses of Instruction," Dr. John W. Adams, University of Pennsylvania.

"Minimum Standard of Entrance Examinations," Drs. D. E. Salmon, Columbian University, and Jas. Law, Cornell University.

"Uniformity of State Regulations Governing the Practice of Veterinary Medicine," Dr. W. Horace Hoskins, of Philadelphia.

The following are the officers of this Association for 1897: President, Dr. Leonard Pearson; Secretary-Treasurer, Dr. H. D. Gill. Executive Committee—Drs. James Law, M. Stalker, D. McEachran, D. E. Salmon, J. L. Robertson.

H. D. GILL, V. S., *Secretary.*

THE UNITED STATES EXPERIMENT STATION VETERINARIANS.

We are advised by Dr. A. T. Peters, of the Nebraska Agricultural Experiment Station, that the above association—which perfected a temporary organization at Buffalo, and which hopes to make it permanent at Nashville—will hold its meeting in connection with the U. S. V. M. A., only that it will have a separate day, Sept. 10.

MINNESOTA STATE VETERINARY MEDICAL ASSOCIATION.

The minutes of a very successful semi-annual meeting of this association, which took place at Owatonna, July 13th and 14th, have been received from Secretary Hay, and will be published in the September REVIEW.

NEWS AND ITEMS.

"THE AMERICAN X RAY JOURNAL" is published at St. Louis. The first number has just appeared. It is edited by D. Heber Roberts.

DR. E. A. A. GRANGE, late State Veterinarian of Michigan, has accepted the principalship of the Veterinary Department of the Detroit Medical College.

PROF. PENBERTHY, of the Royal Veterinary College, Camden Town, has been elected President of the Royal College of Veterinary Surgeons (England).

DR. CHARLES W. DABNEY has been appointed special agent in charge of the scientific and statistical investigation of the United States Department of Agriculture.

DR. W. L. WEST, late of Ellsworth, Me., has sold his practice to Drs. Caldwell and Pollard, and located in Belfast, Maine. He is Secretary of the Maine Veterinary Medical Association.

RHINOMETERS are devices to measure the amount of air a man breathes through his nose, in order that his doctor may compare it to the amount he should take in that way.

DR. A. B. MORSE, formerly an inspector in charge of the Government Meat Inspection at Sioux City, has been transferred to the quarantine service and stationed on the Mexican border.

A CAT belonging to Saloon-keeper Velte, of Newark, N. J., gave birth to five kittens, with but sixteen legs between them. Where the missing legs should be were ligaments binding all five cats together. All are well.

"OUR BROADEST FUTURE IS YET BEFORE US."—(Editorial in July *Journal of Comp. Med. and Vet. Arch.*) What a peculiar complication of the affairs of life it would produce if we were to get our futures behind us.

AT the last annual meeting of the Manitoba Veterinary Association, held in Winnipeg in February, the resolutions on tuberculosis passed by the Buffalo meeting of the United States Veterinary Medical Association were unanimously endorsed.

MARCUS DALY, of Montana, has cabled an offer to the owner of Galtee More, the Irish-bred race-horse who won the last English Derby, of $125,000 and half of his turf earnings for that celebrated animal, his intention being to soon place him at the head of his wonderful stud.

Dr. W. G. CLARK, Secretary of the Wisconsin Association of Veterinary Graduates, has removed from Beaver Dam to Marinette, Wis., where he has formed a business partnership with State Veterinarian H. P. Clute. Members of the above association should address Dr. Clark, care Box 136, Marinette, Wis.

IS DOCKING A NECESSARY OPERATION?—At a meeting of the Lancashire (England) Veterinary Medical Association a paper on "Docking" was read by Mr. William Woods, F. R. C. V. S., and the following resolution was unanimously adopted: "That in the opinion of this society the docking of horses is a necessary operation."

THE PACING MARE MARION MILLS paced a full mile on the half-mile track at Combination Park, Medford, Mass., without driver or sulky, on July 6, in 2:05¾, in an effort to beat her previous record of 2:07¼, made under like conditions. Since then she has paced a full mile, without sulky or driver, in 2:04¾, some watches making it 2:04 flat.

A REMARKABLE ACCIDENT.—The usually very careful medical proofreader of the *Journal of Comparative Medicine and Veterinary Archives* must have been absent on his summer vacation during the typographical preparation of Prof. W. L. Williams' interesting report of a case of "Luxation of the Metacarpo-*Pharyngeal* Articulation in a Horse."

DIED IN HIS SULKY.—A telegram from Rockland, Me., dated July 6, states: There was a sad climax to the races at the trotting park yesterday afternoon. As the horses came before the stand in the first half mile of the fourth heat, Dr. W. D. Farnham, driver and owner of Ikey M., swayed and fell from his sulky. When picked up it was found he was dead. Dr. Farnham was a veterinary surgeon.

DR. SAMUEL J. BUCKLEY has been reëlected to the Chair of Veterinary Science in the Maryland Agricultural College. He writes that his facilities as head of the Experiment Station will be increased, as a new barn and a separate building for hospital and office are in course of construction. He will attend the Nashville meeting of the Experiment Station Veterinarians and U. S. V. M. A.

NEAPOLITANS have a bad reputation for ill treatment of animals, and the Naples, S. P. C. A. seems to have plenty to do. During last year its agents stopped 44,321 carts for carrying too heavy loads, and in nearly one-half the cases had the load reduced; they confiscated 41,011 sticks used for beating animals and 887 spikes used on curb chains; 2282 convictions for cruelty were obtained.

SPAYING THOROUGHBRED FILLIES.—Col. Clay, of the Runnymede, has started in to carry out his plan in regard to reducing the production of thoroughbreds. He has already had three fillies operated upon as an experiment. They are doing so well after having the generative organs removed that some more of the troop of fillies will be operated on, and Col. Clay is doing all he can to have his fellow-breeders follow suit.—(*Breeder's Gazette.*)

ANTHRAX IN TEXAS.—Sporadic cases of charbon are being found near Houston, and the fear is prevailing of an epizootic outbreak. Dr. M. Francis, State Veterinarian, with the assistance of Dr. Burkey, of Galveston, is inoculating the horses of that city. Dr. W. A. Knight, of Houston, reports the finding of cases almost daily, which are removed without the city limits and quarantined. The *Houston Daily Post*, of July 9th, prints a picture of a mare affected with the disease, with foal at her side.

PROGRESS OF THE HORSELESS CARRIAGE.—The guideless wonder, Pacing Johnnie, was very much more of an attraction at the recent Omaha meeting than the horseless carriage. The motocycle did all right enough for a quarter mile or so, but it then became unruly and bolted into the fence, throwing its operator over the rail. It kept crowding on into the fence until it was recaptured, its "pilot" picked up and ministered to, the levers set in place again and the outfit led gently away.—(*Breeder's Gazette.*)

FAMOUS PACING DOG DEAD.—Sport, the famous pacing dog, owned by G. W. Redfield, of Galesburg, Ill., a familiar and popular figure at harness meetings for several seasons past, died at Galesburg, June 10, of pneumonia. He had just recovered from an attack of enteritis, and was unable to rally against a second critical disease. He held three world's records—an eighth in 18¼ seconds, a quarter in 38¼ seconds, and a half in 1:30—and was undoubtedly the fastest canine wiggler yet seen. His skeleton will be mounted by a skilled taxidermist. He was nine years of age.

AMERICAN HIGH-STEPPERS AT THE ENGLISH SHOWS.—Mr. George B. Hulme met with great success in his venture in taking several horses to England to compete in the horse shows of that country. His lot consisted of six chestnuts, the best known of which were Marksman and Cracksman, and in all the campaign covered six shows, winning thirty-five prizes. At the Crystal Palace they won 14 prizes, 1 championship, 1 reserve championship, 3 firsts (Marksman 1st), 1st in single harness, 1st pair in harness. In these classes his horses were matched against England's champion cobs.

RABIES IN NEW JERSEY.—A large St. Bernard dog, apparently suffering from rabies, has been keeping the town of Elizabeth in a state of siege, biting children and innumerable animals. Although every effort was made to destroy the affected animal he eluded his pursuers, keeping up his death-dealing attacks, however. Finally the Board of Health held a special meeting, and Veterinarian F. A. Zucker was placed in charge of the case with instructions to procure necessary assistance to capture the rabid animal and to destroy all dogs known to have been bitten by him. We have not heard the result of the efforts of the vigilance committee.

AMERICAN HORSES IN ENGLAND.—The *Mark Lane Express*, in reviewing the foreign trade of Britain for the first quarter of the year, says: "But if the horse exports have increased, the imports have done so in a far greater degree, for they reached the enormous figure of 11,517, instead of 9210 for the corresponding first quarter of last year. Further, when we find that no fewer than 8407 of these came from the United States, we know that a great many of the Shire and Clydesdale breeds were among them. The Americans, who were such good customers to our breeders ten or a dozen years since, now compete with them not only abroad but in their own markets here at home by sending over big shipments of the progeny of mares and stallions they procured from this country a long time since. When all this is considered we need scarcely wonder at the slackness of demand and sluggishness of trade which has been complained of in the agricultural horse circles of late."

EXPERIMENT STATION BULLETINS.—A wonderful improvement is manifest in the literature of the experiment stations of the various States. In the last issue of the REVIEW we took cognizance of the very valuable contribution to veterinary literature in Bulletin No. 51 of the Minnesota Station, the author being that sterling veterinarian, Dr. M. H. Reynolds. We have received Bulletin No. 81 of the Alabama Agricultural Experiment Station on "Meat Inspection," being a report by State Veterinarian C. A. Cary, and it is one of the fullest and most comprehensive documents that has ever been issued under similar circumstances. It includes a consideration of hog cholera, swine plague, tuberculosis of cattle, of pigs, and of birds, with their post-mortem appearances; staining the tubercle bacilli, histology of tuberculous lesions, actinomycosis, anthrax, Texas fever, malignant catarrh of cattle, putrefying meat, course or order of post-mortems, an extended consideration of the various parasites of domestic animals, and many other matters of interest to farmers, stock-growers and veterinarians.

INSANITY IN ANIMALS.—Insanity in the human subject is supposed by some to have no analogue in the lower animals. Yet many causes, according to Dr. Snelison, will lead to the permanent loss of self-control. Cattle driven from the country through a crowded town will often work themselves into a frenzy. Horses have gone mad on the battle-field. At Balaklava an Arabian horse turned on its attendant as he was drawing water, seized him in his mouth, threw him down, and, kneeling on him, attacked him like an infuriated dog. He bit off another soldier's finger. An instance is related of a docile horse suddenly going mad on a hot day. Everything that came in its way it seized in its teeth and shook as a terrier does a rat. It raided the pigsties and threw the inmates one after another in the air, trampling on the bodies as they fell. Afterward it almost killed its own master, after maiming for life the farrier who was called in. This must have been a case of insanity, the cause of which is often to be found in congenital malformations of the bones of the head. A scientist of authority even goes so far as to prove by what appears to be incontestable evidence that cats, dogs, and monkeys have been observed to have delusions very similar to those of insane people.—(*Popular Science News.*)

SUCCESSFUL CART-HORSE SHOWS.—In the Regent's Park, London, on Whit-Monday, over 770 horses appeared in competition for the valuable prizes offered by the Society. All horses had to pass the preliminary examination of the veterinary inspectors, after which they were examined by four judges for grooming and cleanliness. The gentlemen who undertook this part of the preceedings were the Earl of Verulam, Lord Arthur Cecil, Lieut.-Col. Henry, and Mr. Tom Jay. Four other judges awarded the premiums and silver medals offered by the Shire Horse Society for the best horses, irrespective of breed, and two others the prizes for horses of the Suffolk breed. The show was a great success. The parade and horse show held at Providence, R. I., Monday, June 7, was modeled on lines similar to the cart-horse parade held in London. This was the first event of this kind ever held in this country, and the Providence Horse Improvement Association intends in the future to make the affair an annual one. The initial parade and exhibition was an unqualified success and reflects credit on the association. Messrs. E. B. Conant, of Lowell, Mass.; John Shepard, of Boston; Harrison K. Caner, of Philadelphia; D. Winslow Clark, of Boston; Jos. Balch, M. F. H., and Herbert Maynard, of Dedham, Mass.; A. R. Burnham and J. C. Small, of Willimantic, Conn., were the judges, the veterinary surgeons being Dr. John T. Cunningham and Dr. L. Parker. The judging of the draught horses and delivery wagons was one of the most interesting features of the show, especially the heavy-draught, eight-horse teams.

FIRST PROSECUTION UNDER THE NEW HORSE-SHOERS' LAW IN NEW YORK STATE.—Lawyer Edward J. Callahan and Charles J. McGinniss, the former counsel and the latter secretary of the National Horse-shoers' Protective Association, appeared in the Ewen Street Police Court, Brooklyn, N. Y., on July 21st, to prosecute the first case brought at the instance of the association under amendments made at the last session of the Legislature to Chapter 271 of the laws of 1896, entitled "An act to regulate the practice of horse-shoeing in cities of the State of New York having a population of 50,000 or more." The defendant was Edward Jones, a horse-shoer at McKibben Street and Graham Avenue. The prosecution charged that Mr. Jones filed an affidavit with the County Clerk of Queens County that he had been for three years, prior to the passage of the act, a practical horse-shoer, whereas the prosecution contended they could prove that Mr. Jones had not practiced the trade for two years past. Lawyer Callahan explained that the association could prosecute Mr. Jones for perjury, if it so desired, but it understood that the defendant was willing to plead guilty to a misdemeanor and it was willing to accept that plea, as the moral effect of the decision would be a sufficient warning to others. The new law, Mr. Callahan contended, provided that no horse-shoer should be permitted to register unless he had satisfactorily passed the examination before a board of examiners provided by the government for that purpose and consisting of one veterinary surgeon, two master and two journeymen horse-shoers. After consulting the amended statutes Justice Lemon imposed the fine of $10 for the misdemeanor. The defendant was not represented by counsel.

LAWSUIT FOR A HEN'S BOARD BILL.—Daniel Rice, of Arverne, L. I., is being sued for a hen's board bill—$38.50. He thinks the bill exorbitant, and refuses to pay. His refusal will bring into the District courts of New York one of the oddest specimens of fowl ever seen. This board bill, by the way, is the only bill the hen possesses, for she has a distinct human face. She has a nose with a slight Roman bend, and clearly defined nostrils. Two lips soft and pink, and regular upper and lower lips take the place of a beak, while the interior of the mouth resembles to a surprising extent that of an infant. This hen's mother was a hen of the Poland species, a hard-scratching fowl, on an Indiana poultry farm, and attended strictly to business. On one occasion she laid an egg, and then instead of waiting for others, promptly "set" on that solitary egg. A surprise was in store for that fond mother. When her infant chick first began to "peep" she realized that something was wrong. It resembled no other chick of hers, nor did it look at all like those of her neighbors. As a result the mother promptly abandoned her offspring. The human-faced chick was, moreover, ostracized. None of the other members of the barnyard would tolerate the new arrival. A year ago the hen was presented to Mr. Rice, a retired poultry dealer. As the hen required special feeding Mr. Rice gave her into the care of Dr. George Cohen, a veterinary surgeon, at Nos. 135 and 137 Division Street. Dr. Cohen was instructed to find a diet upon which the hen would thrive. The doctor began to experiment, and ascertained that the hen preferred beefsteak and mushrooms, Welsh rarebits, lobsters, paté de foi gras, pie, gruels, and in fact, most any food prized by ordinary mortals. They called the hen "Mabel Corbett," owing to the pompadour of feathers which rises for an inch or more over her eyes. She is a great favorite with the veterinary surgeon and follows him and his men about like a dog, uttering a queer gurgle, unlike any noise ever made by other hens. She is a year and a half old and has never laid an egg. Mr. Rice a few days ago expressed a desire for the return of his peculiar pet and then Dr. Cohen presented a bill for $38.50 for medical treatment, board and lodging for nearly five months. Mr. Rice refused to settle and the veterinary surgeon placed the hen's board bill in the hands of Lawyer Levy, of No. 13 Chambers Street, who will sue the owner for the amount. Lawyer Levy is only waiting his opportunity to serve Mr. Rice with the necessary papers.—(*New York Journal.*)

A VETERINARY PRACTICE FOR SALE.

The best chance ever offered for a good, enterprising Veterinary Surgeon, in the best Summer resort in the United States; the population is over 20,000; the surrounding country is of the very best. No other qualified Veterinary Surgeon within 20 miles. Hospital, with all modern improvements, 13 stalls, office and medicine rooms the finest in the State, and all complete. Hospital is within 300 yards of race track, of 1,000 stalls; in racing season stalls are all occupied and a number of the race-horses winter here, making it an all-the-year-round business.

My books will show that I have done over $50,000 worth of business in six years. The very best reason for offering for sale will be given. I keep five horses in my practice. I own everything about the place. I will sell practice and lease the property, consisting of the described Hospital and a dwelling house of ten rooms, all newly furnished, and latest improved house, or I will sell the property and everything complete on very easy terms. Very little money will be needed. Any good man that would like the above described business, I would be pleased to have come and make me a visit for a week or ten days and look the prospects over and see for themselves. Address T. C. S., care *American Veterinary Review*, 141 West 54th St., New York City.

FOR SALE—A HORSE AMBULANCE.

A splendid horse AMBULANCE complete in every respect. Elegantly ornamented with brass railing, brass lamps, etc. Painting the work of an artist. Makes a finer appearance on the street than a fire engine. Equipped fully with ropes, chains, hobbles, windlass, cranks, etc. The portable bottom is on 18 rollers, which can be moved anywhere, and the completely disabled animal secured on it and drawn into the ambulance with the windlass. A horse using three legs only can walk into it. The ambulance is lined inside with steel and the whole is built to last forever.

Veterinarians from many different places say it is the finest and best they ever saw. Continued illness the only reason for selling.

Harness ornamented to match the ambulance.

Address "AMBULANCE," care of AMERICAN VETERINARY REVIEW, 141 W. 54th Street, New York City.

ASSISTANTSHIP WANTED.

By a young man (26) graduate of A. V. C. 1896. Want a place where can see plenty of Practical Work. For further information, address,

J. S. BUCKLEY, Mt. Washington, Maryland

AMERICAN VETERINARY REVIEW.

SEPTEMBER, 1897.

EDITORIAL.

GLANDERS—ITS CONTAGION—ITS CURABILITY—MALLEINE.

IS GLANDERS COMMUNICABLE THROUGH THE DIGESTIVE APPARATUS?—IS GLANDERS CURABLE?

These are two important questions, upon which much has already been written. A new phase has been opened lately. Prof. Nocard, the celebrated professor of the Alfort School, has worked out the two problems quietly, and a few days ago gave positive evidences of his previous declarations before the members of the commission hippique of the War Department and a large number of veterinarians (civil and military), with whom I had the pleasure of following Prof. Nocard in his demonstrations, which concluded in answering the two questions in the affirmative.

To carry on the experiments twelve horses were placed at his service at Alfort by the Secretary of War. These horses, in fair condition, *were left out in the field, secured to a post with ropes, permitting of reasonable liberty; they were kept exposed to all kinds of weather; were well fed, but, in the free open air;* they were first submitted to the malleine test, to ascertain their thorough freedom from any glanderous infection.

* * *

On November 30th all those horses drank water out of a pail containing a certain well-measured quantity of culture of glanders. A few days afterwards, varying from four to eight days, a great oscillation in the temperatures of these animals was observed, oscillations which indicated only their febrile condition. After the eighth day, in a few a gland was noticed which assumed the characters found in the glanderous animal.

On December 15th, all the animals received an injection of malleine. This was followed in all by a thermic and local reaction, with swelling, general prostration, loss of appetite, etc. With some animals, these manifestations lasted a few days, but subsequently all returned to a normal condition in a variable length of time.

A month later, in January, another injection of malleine was followed with the same reactions; however, in a few this was *marked with less severity*. On January 21st, the third month of the experiment, three horses presented such external clinical symptoms that further experiment was useless, and they were destroyed. The disease given by contagion through the digestive canal was doubly made evident by the appearance of the symptoms and by the facts recorded by the use of malleine.

Later on two more animals had the same ending.

* * *

The injections of malleine were kept up every month until July, and from the third month a change was observed in the thermic reaction. With some animals it only diminished, with others there was none. The records of the temperature shown by the maps exhibited by Prof. Nocard were of great interest, in following the changes which were evidently going on in the subjects of the experiments. One of the animals, after remaining without reaction for a while, suddenly exhibited peculiar symptoms and a marked febrile condition, which justified its being destroyed. The lesions that were found at the post-mortem were sufficient to explain his condition. He had acute pleurisy. The upper part of the lungs displayed also some slight peculiar glanderous lesions.

In March (fourth injection of malleine) there were of the six horses remaining some that reacted very slightly, the balance did not.

In May the reaction failed to appear in any of them, and from that date to July, when four of these horses were killed, when three, four and five months had elapsed, if the reaction is absent, if no elevation of temperature, no swelling at the point of inoculation are observed, after the evidence of the presence of the disease, inoculated through the digestive canal, has been so conclusively demonstrated by the malleine test, it is, said Prof. Nocard, "*because the animals have recovered—they are cured.*"

Four of the six animals were destroyed, and post-mortems made before the greatly interested crowd of scientists who had listened to the history of the whole experiment as related by Prof. Nocard.

In all the lungs were found: miliary tubercles in their various forms—caseous, calcareous; some translucid tubercles; some small spots of lobular broncho-pneumonia; but no other lesions of glanders, either in the trachea or anywhere else. In fact, the lesions were very much similar to those that one meets with in the lungs of those peculiar forms of latent diseases, in pulmonary glanders. But these macroscopic lesions were those of contagious glanders only in appearance, to the naked eye; they were not otherwise; they were dead lesions, so to speak; the bacillus was no longer present, and the evidence of it was given by a supplementary experiment.

Most of these lesions, miliary, caseous, calcareous, translucid tubercles, with pieces of lungs showing lesions of broncho-pneumonia (the nature of which was not certain), were collected, put into a china mortar, and crushed thoroughly with a small quantity of bouillon, to be inoculated by Dr. Roux to female donkeys and guinea-pigs, both typical subjects for such investigations. In all of them the results were negative, with the exception of a local abscess at the point of inoculation; the donkeys did not develop glanders; the guinea-pigs did not have the characteristic orchitis of glanders.

* * *

From this interesting experiment some very important facts impose themselves:

(1) Evidently glanders can be communicated through injection of the digestive canal.

(2) Malleine will, by its ordinary manifestations, indicate the presence of the disease a few days after the injection.

(3) If the thermal reaction diminishes after having been characterized, or is only lower than in ordinary cases, it indicates that a process of recovery is going on.

(4) Complete absence of thermal reaction, after its full development or after a gradual diminution, means death of the bacillus—means recovery.

It is, then, no longer the lesions only which tell if latent glanders exist or not, but malleine, which affirms their living or of their dead conditions, of their characteristic and dangerous or their inert and harmless nature.

* * *

There may not be a great practical value in these results, and from them it must not be concluded that any case of glanders is curable, nor that attempts at treatment will be justified in any form. Well-developed cases, with the characteristic chancre, gland and discharge, must (for the present, at least) be excluded from the class of those in which malleine can have any effect. It is only with those in which external signs are absent, where the disease is latent, in animals which are in good condition, and which can receive the best feeding and have the benefit of long rest in the fresh open air, that an attempt might be undertaken; but in the presence of the long required rest, loss of work, and possible failure, the practical result can be looked for only in very exceptional cases. Prof. Nocard has shown me one animal which demanded no less than twenty months of treatment and observation before he was pronounced cured.

* * *

There remains one point of importance; and that is, is recovery temporary or radical? Has the rest, good feeding, freedom in the pure fresh air only partially destroyed the vitality of the bacillus; and will it not resume it and its activity as soon as the horse is returned to hard work, privations, etc.?

The two horses that remain alive from the whole experiment, which for the last three and four months have reacted no more, which are in good condition and are considered as cured, are to be returned to their duties in the army, and are going to be submitted to the severe work of the great manœuvres, from which it is fully expected they will come out free of the disease. We shall later on report about them. A. L.

PARIS, August 1, 1897.

A REPLY? YES! . . . . . AN EXPLANATION? NO!

In September, 1896, Prof. Law, in public, said: "To this last, lowest depth of sordidness (the sale of diplomas) MORE THAN ONE VETERINARY COLLEGE in America has sunk."

In January and February, 1897, the REVIEW called upon him to explain what was meant by this sweeping accusation, saying to him: "If one, which do you accuse? If more than one, how many? Name them."

Receiving no answer, in July, 1897, SIX MONTHS afterward, the REVIEW renewed its request for an explanation.

Prof. Law could no longer remain silent; he replied through the August issue, and his answer has for one month been before the veterinary profession of America, composed for the most part of alumni of the private schools which we assumed Prof. Law had reference to.

In the communication which he has been pleased to make he alludes to one article of the REVIEW printed in the first volume of its publication, and he interprets it to fit his argument. In that article, speaking of institutions CHARTERED THIRTY YEARS AGO, the author stated that "we meet with many diplomas which have been unjustly and illegally granted, and may be considered worthless." He also refers to other pages relating to the "Philadelphia Veterinary Diploma Shop" and "Correspondence," and from these Prof. Law tries to make the profession of to-day believe that in his address he had no circumstances in view other than the writings of the senior editor of the REVIEW twenty years ago!

But twenty years ago the editor of the REVIEW did not say that the colleges spoken of, and which granted diplomas so unjustly and illegally, SOLD their degrees, but that these schools were schools only in name, without buildings, without college proper, and it was not certain that regular lectures were ever given. And, again, in the references to the "Philadelphia Veterinary Diploma Shop," Prof. Law ought to know that every veterinarian in the United States understands that the "Veterinary College of Philadelphia" was never one in the sense that is granted to the private veterinary institutions that have existed for more than thirty years in this country.

But, let it be so! Let us admit (what a disgrace!), to assist Prof. Law in his defence, that the work of McClure, which the REVIEW exposed in 1877, was the work of a private veterinary college. This is only one of the accused institutions. Prof. Law said there were *more than one;* which are the others?

No; the director of the New York State Veterinary College has gone back to ancient history. The citations which he thought might help him out of the position into which his words have forced him, do not explain to unbiased readers the unfortunate utterances which he attempts to harmonize; they know that he did not have in his mind the schools he alludes to in his reply, no more than the REVIEW had when it felt it its duty to ask an explanation.

What the REVIEW did in 1877 was done for the good of the profession. What it did in 1897 was done for the reputation of the American veterinarian. It feels that its duty only has been accomplished; to have passed the affront by in silence would have been a remissness not in keeping with its history nor its ambition. But our efforts have been unsuccessful in inducing Prof. Law to vouchsafe an explanation. True, he has broken his silence, but his innuendo is undisturbed.

We now leave the question in the hands of the alumni of the private veterinary schools of America, in the hands of the National Association, in those of the Association of Veterinary Faculties of North America. A. L.

THE NASHVILLE MEETING AND THE REVIEW.

Before this September number of the REVIEW can reach many of the members of the United States Veterinary Medical Association they will be *en route* for Nashville to attend its thirty-fourth annual meeting, to participate in the exceptionally full and interesting programme which has been secured for the educational and social entertainment of those who are so fortunate as to be able to be present. The REVIEW has detailed to its readers the preparations for this convention as they have developed, and has never ceased to urge them to strain every sinew to profit by the opportunity afforded, and we go to press on the eve of assembling with the firm belief that none will be absent where attendance is possible; and to those who may fail we are going to do our full duty—for the October REVIEW will be a perfect reflection of the stirring veterinary events which shall occur at Nashville, and, if they are sorrowful that circumstances of whatever nature have bound them at home, they shall at least be glad that they have the REVIEW to fall back on to partially compensate. Then we say, Godspeed to the National Convention of 1897!—the most promising in every respect that has ever been called to order.

QUACK APPOINTMENTS ALREADY YIELDING FRUIT.

Apropos of the appointment by the Governor of Illinois of a non-graduate to the office of State Veterinarian, and the warning letter as to its effects upon our foreign trade in live stock by President Walker, of the Chicago Veterinary Society, we find the following comment in the August *Veterinary Journal* (England): "Evidently the warnings of Mr. Walker are fully justified, for Mr. Bowhill, F.R.C.V.S., formerly professor of bacteriology at the New Veterinary College, Edinburgh, who has recently returned to this country from America, informs us that in the vessel in which he crossed the Atlantic there were three horses that died of 'pinkeye' on the passage. In view of the above facts, our veterinary inspectors on this side of the water will be more than ever on the alert for contagious disease among cattle and horses from America. With the office of State Veterinarian in Illinois held by an unprofessional man, who is being rapidly 'boycotted' by the members of the veterinary profession in that State, and with American horses dying of 'pinkeye' on the passage to this country, a lengthened quarantine on American horses imported into this country is one of the certainties of the near future."

TWO EXCELLENT APPOINTMENTS.—The appointments just announced of Prof. Leonard Pearson, B.S., V.M.D., Professor of the Theory and Practice of Veterinary Medicine at the University of Pennsylvania, to the Deanship of the Veterinary Department of that institution, and Prof. E. A. A. Grange, late State Veterinarian of Michigan, and professor in the State Agricultural College, to be Dean of the Veterinary Department of the Detroit Medical College, are very satisfying to the profession of the country and are very hopeful signs of the times. They are both men who have the cause of higher education very close to their hearts, and they will carry with them into their new offices the vital qualities of success—scholarly training, enthusiasm, energy and a desire to elevate the profession of veterinary medicine by supplying men of the right type.

ARE FISTULÆ OF THE WITHERS INFECTIOUS?—Dr. H. S. Drake, of Leesburg, Virginia, reported to the last meeting of the Virginia State Veterinary Medical Association, through the Committee on Statistics, a number of instances coming under his observation of fistulæ of the poll and withers in horses and colts which suggested the element of contagion or infection. See "Society Meetings," this issue.

THE NEW YORK STATE VETERINARY MEDICAL SOCIETY will meet in Syracuse, Sept. 14th and 15th, and the programme, as far as completed, will be found upon the news pages. It is the duty of all members to attend; of all others to join.

ORIGINAL ARTICLES.

[WRITTEN SPECIALLY FOR THE AMERICAN VETERINARY REVIEW.]

THE PARASITIC ICTERO-HAEMATURIA OF SHEEP.

By W. L. WILLIAMS, V. S., PROF. OF SURGERY AND OBSTETRICS, NEW YORK STATE VETERINARY COLLEGE, ITHACA, N. Y.

Under date of July 1st, 1895, was published as a part of Bulletin No. 8, of the Montana Agricultural Experiment Station, some preliminary investigations regarding an outbreak of parasitic ictero-hæmaturia, or red water and jaundice of sheep, a disease heretofore described, so far as we know, only by Profs. Babes, of Roumania, and Bonome, of Italy. Since the publication of Bulletin No. 8, no outbreaks of the disease have been reported outside the area originally infected, and no reliable information has been gleaned to indicate the existence of this fatal malady anywhere in the United States, except in the Silver Bow and Deer Lodge Valleys, near Butte, Mont. The subject is one of great scientific interest, and while of economic importance in a very limited area only, the possibility of other sheep ranges becoming similarly infested lends to the subject sufficient importance to warrant further study of its nature, and led me to keep as close watch as possible regarding its further continuance and spread.

The preliminary account of the disease, published in Bulletin No. 8, appeared in full in the *Veterinary Magazine* (Philadelphia), Vol. II., p. 497.

In the meantime the disease had abated, several owners sold the remnants of their herds, and nothing more was known of the malady until on May 28th, this year, a telegram was received from Mr. M., of Silver Bow, announcing its reappearance.

Proceeding to Silver Bow, on May 29th, it was learned that the disease, so far as known, was confined to the herd of Mr. M. His herd had wintered in the lower Silver Bow Valley, and had remained free from any epizootic disease until their removal, May 9th, to the foothills some three miles from their winter quarters, where, after a stay of about ten days, the disease appeared in a pronounced form, and sheep began dying in considerable numbers.

The herd was a mixed one of 1800 sheep, largely ewes, and 240 Angora goats. About the 18th or 19th of May, the sheep began dying at the rate of two to four daily, and continued through June. During the investigations of a year ago it was thought that one or two Angora goats had died of the disease, but in the present outbreak none of the 240 goats, which commingled freely with the sheep, showed any signs of the malady.

On May 30th post-mortem examinations were made on three affected animals, the results of which follow.

Case No. 1.—An aged Merino ewe, about 50 lbs. weight, weak, and emaciated, was killed by bleeding. The subcutaneous connective tissue was of a pale, dirty-yellow color, the abdomen contained three or four ounces of dark colored serum, liver slightly enlarged, yellow, firm; gall bladder distended with dark-green bile, the connective tissues surrounding the gall bladder infiltrated with pale, dirty-brownish serum. Alimentary canal was moderately filled with food and offered nothing of note except a well-marked dirty-brown effusion along the smaller curvatures of omasum and abomasum. Kidneys enlarged, dark, soft, and on section much blackish urine exuded; bladder contained eight ounces dark-brown, semi-transparent urine. Uterus contained placental débris from recent parturition. Spleen small, globular, contracted, black on section. Lungs normal, heart pale, flabby and empty. Facial sinuses contained six œstrus larvæ.

Case No. 2.—Grade Leicester ewe, 75 lbs., down, unable to rise. Conjunctivæ dirty-brown in color. Killed by bleeding. The blood flowed freely (black, thin and smeared on a glass slide appeared dirty-brown in color, quite devoid of the usual red). Subcutaneous connective tissue dark, dirty-yellow. Omental and mesenteric fat dirty, dark-yellowish brown, spleen small, firm, dark; the liver large, dark in color, the lobules yellow, the inter-lobular spaces filled with blood which gave a general dark color; the gall bladder contained about ten ounces dirty yellow bile, the bile duct contained five tænia fimbriata, each about six inches on length. Kidney slightly enlarged, dark-brown, moist in section, bladder empty. Pericardium contained half an ounce orange-colored serum, and showed numerous ecchymoses of the size of a pinhead; endocardium of left ventricle profusely ecchymosed, the discolorations being as much as one inch long by one-eighth of an inch wide, the heart tissues were flaccid and dirty pale-yellowish. The uterus contained placental débris of apparently three to four days standing. The facial sinuses contained four œstrus larvæ.

Case No. 3.—An aged Merino ewe, about 70 lbs. weight, with young lamb at side, in fair flesh, able to walk. Conjunctivæ and skin a dirty olive color. Was killed by bleeding and autopsy made at once. Blood moderate in amount, and of a dirty reddish-brown color. Subcutaneous connective tissues throughout the body, and to a lesser degree the muscular tissues, were of a dirty leaden color, giving appearance of animal having been dead for a number of hours, with consequent post-mortem changes. There was, however, no abnormal odor, emphysema nor other evidences of decomposition. The alimentary tract was well filled with food, the liver large, dark yellowish brown, very friable; the gall bladder moderately filled with yellow bile. The kidneys much enlarged, blue-black in color, œdematous, soft; on section very moist; bladder almost empty, urine dirty brown in color. Heart was pale and flaccid. The flaccid sinuses contained six œstrus larvæ.

Case No. 4.—A large yearling ewe, not pregnant, weak, moved with staggering gait, ears drooping, very œdematous, being two or three times their normal thickness. Conjunctivæ and skin had a bright lemon color. Patient killed by bleeding, blood scanty and feebly coagulable. Body well nourished and fat, all adipose and connective tissues throughout the body were of an intense lemon-yellow color, even the chordæ tendinæ of the heart partaking of the same color in a marked degree. Liver enlarged, bright yellow in color, lobules well marked, interlobular being congested and dark red. The gall bladder contained 10 ounces of dark black-green bile, so dark as to appear perfectly black *en masse.* Kidneys slightly soft, moist; bladder contained one ounce of coffee-colored urine. Spleen small, contracted, hemispherical. Intestinal tract well filled, normal.

The above cases given in detail are essentially parallel to the results summarized in Bulletin No. 8 of the Montana Station with the notable exception of Case No. 3, in which the color of the tissues was very different, yet agreed in one important particular—the evidently grave disorganization of the blood cells. Case No. 4 exhibited, in a marked degree, a symptom, the œdema of the ears, which was only occasionally noted in the outbreak described in Bulletin No. 8, while in the above outbreak the Chinese shepherd usually noted the œdema of the ears as the first symptom of the disease, and, believing that slitting the ears in some way modified the disease, habitually practiced it and noted the escape from the wound of much of this anasarcous fluid. The face, too, was not infrequently swollen. An interesting observation was the fact that almost all affected animals were ewes which had but recently, two to six days prior, given birth to lambs, the ordeal of parturition apparently inducing a condition of the system which more readily permitted the ravages of the micro-parasite.

TETANUS.

By Leonard Pearson, V.M.D., Philadelphia, Pa.

Read before the meeting of the Pennsylvania State Medical Veterinary Association, Philadelphia, March 2, 1897.

Tetanus of horses is a disease that has been known since the earliest times, and was described by Apsyrtus during the fourth century. The views in regard to this disease that have prevailed at various times have differed widely, and it has variously been ascribed to an "inflammation of the blood," an injury to the brain or spinal cord, a peculiar electrical condition of the atmosphere, foods of various kinds, etc. Subsequently tetanus was divided by the writers of text-books into several varieties, particularly traumatic, rheumatic, idiopathic; and each of these forms of disease was ascribed to different causes. It was not, however, until the researches of Nicolaier that the real cause of tetanus was discovered. Nicolaier's first announcements were published in 1884, and they were amply supported and confirmed by the researches of Kitasato, published in 1889. Kitasato was successful in isolating and in growing, in pure cultures, the tetanus bacillus, and he proved by the inoculation of animals that the disease could actually be produced by the bacillus that he had isolated and described.

The tetanus bacillus is an organism of rather peculiar shape. It is rather long and slender, and has a round enlargement at one end, which contains a spore. This bacillus has been found in earth, in pus, in manure, and in the secretion from infected wounds. The bacillus is isolated in the laboratory with much difficulty, because it will only grow where there is an absence of oxygen.

The spore of the tetanus bacillus is quite resistant, very much more so than the bacillus itself, and it requires heating at boiling temperature from two to five minutes to destroy it. The isolation of the germ in the laboratory is based upon this characteristic, and is carried out after the method first described and employed by Kitasato. A small quantity of the material to be examined is exposed for an hour at a temperature of 80° C., and in this way all of the bacteria and most of the spores in the substance, with the exception of the spores of tetanus, are destroyed, and the inoculation of culture media with material so treated enables one to obtain a pure culture of the tetanus bacillus without much further difficulty. The tetanus bacillus, and particularly its spores, is not only resistant to heat, but to other conditions that are unfavorable to the growth of germs. For instance, it requires exposure to a 5 per cent. creolin solution for five minutes or to 5 per cent. carbolic acid solution for ten hours to destroy it. A 5 per cent. carbolic acid solution, together with 0.5 per cent. of hydrochloric acid, destroys these organisms in twenty-five minutes. A particularly strong antiseptic for the spores of the tetanus bacillus is trichloride of iodine. This fact was discovered by Behring, and has been made use of in a number of important experiments. These germs are not only resistant to the digestive fluids, but they may even multiply in the digestive tract. This accounts for their presence in the manure of horses.

The tetanus bacilli are so widely distributed, and find the conditions outside of the living body so favorable to their existence, that opportunity for infection is abundant, and there are few places that are entirely free from this disease, although it is far more prevalent in some localities than in others. The manner in which the bacillus is introduced into the living animal is a matter of considerable moment as regards the danger of such inoculation, since the organism will not grow in the presence of oxygen; all inoculations with the tetanus bacillus are not dangerous, but when the organism is introduced deeply into the tissues away from the air, or when it is introduced with other germs that use up the oxygen in the surrounding parts, tetanus may develop.

The wounds that are especially apt to be followed by the development of tetanus are wounds made by objects that have been in contact with the earth, and are therefore most apt to contain tetanus germs. For instance, pricking of the foot is especially dangerous in this respect, and a calk-wound of the coronet is also accompanied by considerable danger, as it is likely to be made by an object that has been in contact with earth and manure, and to be coated with more or less tetanus bacilli. A deep puncture with a piece of wood, castration, and docking have also been followed in many cases by tetanus. The use of clamps in castration was frequently followed by tetanus in the olden times, when it was not customary to disinfect these instruments. The infectious wound-secretion containing the bacilli and spores of tetanus would in this way be carried from one colt to another, and the death of a large proportion of the animals castrated by certain operators or in certain districts was not uncommon. The not rare cases of tetanus that occur without external injury are explained by the assumption that infection has taken place through a wound that was so small as to escape notice, or that infection occurred through the mucous membrane of the intestinal canal.

The disease, tetanus, is caused by the tetanus bacillus by means of a toxin, or ptomaine, that is developed by this germ. This substance is produced by the germs at the point of inoculation. It is carried by the circulation to all parts of the body, and its action on the central nervous system is such as to produce the muscular spasms that are characteristic of the disease. The toxin of tetanus is also produced when the germ is grown in culture-media in the laboratory, and it has been found that the injection of a small quantity of toxin that is entirely free from living organisms will produce the symptoms of tetanus. The power of this toxin is extraordinary, and but a very small quantity of it will produce death.

The rapidity also with which the toxin is developed is astonishing. Kitasato has found, for instance, that when mice are inoculated at the root of the tail, and afterward the skin and subcutaneous tissues around the inoculation are removed and cauterized, the treatment is without avail unless it is performed within one hour after the inoculation. In cases of tetanus toxin is found in the muscle-juice, the blood, the urine, and in the milk. As the toxin gradually passes from the point of inoculation, where it is developed, into the general circulation, it is noticed that rigidity of the muscles begins in the inoculated member or part of the body and gradually extends to the more distant portions. It has been shown by Nocard that by the time the symptoms of tetanus appear in the horse the saturation of the tissues with tetanus toxin is quite general, and the amount of toxin contained in the body at that time is enormous.

The bacilli themselves never enter the blood, and, of course, cannot pass into the circulation, and after they have elaborated enough toxin to cause death the post-mortem appearances, as is well known, are about normal, with the exception of the suppurating wound at the point of inoculation and more or less congestion of the central nervous system.

It has been shown by experiments conducted by Behring and Kitasato that the trichloride of iodine restricts to a very great extent the vitality and virulence of the tetanus bacillus, and by introducing into susceptible animals small quantities of tetanus cultures that have been treated with this agent, and gradually increasing the strength of such cultures by using smaller quantities of the trichloride of iodine, a certain degree of immunity can in time be developed, so that at last very large quantities of pure culture can be introduced without producing tetanus. An animal treated in this way gradually develops in its blood a chemical substance that neutralizes the effect of the toxin of tetanus, and which is, therefore, known as an antitoxin.

The immunity that the animal possesses depends upon the antitoxin that is present in its blood. If another susceptible animal is inoculated with a fatal dose of tetanus toxin, and is treated immediately thereafter with an adequate amount of antitoxin derived from the serum of the immunized animal, the development of the disease will in this way be prevented, and it is upon this principle that the treatment of tetanus with antitoxin is based. Experiments conducted by Vaillard and Rouget have shown, that if the toxin is removed from the tetanus bacilli, they can then be introduced into an experimental animal without evil effects, because they are quickly taken up by phagocytes and destroyed; but when tetanus bacilli containing antitoxin are introduced they are not taken up by phagocytes, and quickly produce toxin, causing the development of tetanus. The antitoxin, injected immediately after the toxin-containing bacilli are introduced into the body, neutralizes their poison to such an extent that they can be destroyed by the phagocytes; but if the antitoxin is not present in the blood when the animal is inoculated with the germs of tetanus, or if it is not introduced into the circulation shortly thereafter, the tetanus bacilli produce so much toxin that it cannot be neutralized, and the development of tetanus cannot be prevented. That is to say, tetanus can be prevented with great certainty by the use of antitoxin; but when the symptoms of the disease have once appeared there is so much toxin in circulation that it cannot be neutralized by any amount of antitoxin that it is possible to introduce, so that the treatment of tetanus with antitoxin is not yet established on a profitable basis.

The prevention of the disease, however, by the use of antitoxin is in many instances practicable and a valuable resource. For example, it is known that tetanus is much more prevalent in some districts than in others, and that exposure is frequently followed by tetanus. It is also known that on some farms and in some stables tetanus is a common disease, and even slight injuries result in death from this cause. Under these conditions it may be serviceable to administer to the animal an immunizing dose of antitoxic serum, after which the contemplated operation may be performed without risk. Or if a valuable animal sustains a puncture of the foot or a punctured wound or a calk-injury, and particularly if the animal is kept in a stable where tetanus has previously appeared, it would be advisable as a general precautionary measure to protect it by the use of antitoxin serum.

My attention was recently called by Dr. Walters, of Wilkesbarre, to a mine in Dauphin County wherein there were almost one hundred mules, and of these twenty-three died of tetanus during a period of about two years. In January five or six died. I obtained some tetanus antitoxin, which was administered to fifty mules that occupied the stables in which the tetanus had previously appeared. Since that time no cases of tetanus have been reported.

Tetanus antitoxin has been used most extensively by Nocard in France, and Schutz in Germany, and they report that the mortality from tetanus has been considerably reduced by the use of this agent in districts where the disease prevails extensively and where antitoxin has been used before operations, and after injuries as a precautionary measure.

The recent researches that have been made in relation to this disease, and the knowledge that we now have in reference to its toxin, explain the indifferent results that have attended the use of medicines. While it is true that certain therapeutic agents will, for a time, prevent the spasms that occur in tetanus, they cannot cure the disease, for they do not neutralize the poison, and as soon as the animal emerges from the effect of the drug the spasms are as bad as ever; but during the entire period the nervous system is irritated by the toxin it is gradually losing its vitality, and the animal is approaching death.

The only forms of treatment that are at all promising in the light of our present knowledge of this disease are: (1) The use of tetanus antitoxin; (2) the excision or sterilization of the local wound; (3) complete quietude and rest, thus giving an animal an opportunity to conserve its strength to the greatest possible degree, and make its conditions most favorable for overcoming the action of the toxin. It may be that other means of neutralizing the toxin will in time be discovered, or that it may become possible to produce the elimination of the toxin from the body, but as yet all efforts in this direction, including the use of purgatives, diuretics, and diaphoretics, have signally failed. Our greatest hope is in the development of the antitoxic treatment.

THE TUBERCULIN TEST FOR TUBERCULOSIS IN MILCH COWS.

By Prof. David S White, Ohio State University (Veterinary Department).

A Paper read before the Ohio State Veterinary Medical Association.

Heretofore in dealing with such chronic contagious diseases in our domesticated animals as, for instance, glanders in the horse and tuberculosis in cattle, we have been considerably hampered by not being able at all times to recognize them in their latent, hidden forms. All that modern developments have given us in the way of special instruments and mechanical devices to help us determine the presence of disease in internal organs in the animal body, have only been useful in a small percentage of instances. Especially in our animals is physical diagnosis difficult in chronic hidden diseases. Although in more pronounced cases auscultation (the stethoscope) and percussion (the hammer), the irregularity in blood temperature (thermometry) and more rarely the pulse, may tell us that there is lurking within a lung a nest of contagion, in by far a greater number, no one, if his five senses be ever so acutely developed, can discover its presence. The disease tuberculosis, the diagnosis of which I shall treat briefly of to-day, usually presents itself in a latent form. It is a slow, wasting disease, " a pestilence that walketh in darkness," and as a venerable and esteemed colleague rightly says, " often under an outward guise of health the subject of the disease carries around germs of death to his unsuspecting and more susceptible fellow." The very propagation of tuberculosis seems to depend upon its latency. Acute diseases in our cattle, like anthrax or Texas fever, present a bold front, manifest well marked symptoms, their victims soon succumb, hence well directed veterinary police measures can readily and comparatively easily cope with them and crush them out. To effectually stamp out forever any infectious disease we must seek its source. To destroy the source must be to destroy the disease. In consumption of our cattle the source of the disease (the germ) is always harbored in an infected animal. One may possess a perfectly healthy herd of cattle, he may introduce into this herd an apparently sound cow, which may carry in its lungs a few tubercular nodules, the presence of which no expert can unearth. This infected animal can, however, transmit the germs to those standing next to her in the stable, and from them to their neighbors, etc., if they only be kept living together for a long enough period of time, until perhaps twenty-five, fifty, one hundred per cent., depending upon the sanitary conditions of the stable, the food and care the animals receive, become victims of the disease.

When consumption was thought to be due to bad sanitary arrangements alone, dirt, dust improper food, etc., efforts were made to circumscribe and combat the plague by butchering those animals presenting well-marked clinical symptoms, *i. e.*, those in which the disease had become acute or from the morbid process undermining of the animal's whole system, making it appear a thin, emaciated, hide-bound, conghing object of ill-health. To this was added a disinfection, a spreading of certain chemicals about the stable. Such methods were never availing of much result; it was usually not long before another cow would "go the same way." Not so much from acute cases is tuberculosis spread, as they soon die, but from the chronic, latent cases. Until within the past few years, with the exception of a few sporadic attempts at preventing the spread of consumption in foreign countries and in our New England States, little has been done towards the eradication of this "White Plague of the North." Until fourteen years ago the cause of the disease was shrouded in mystery.

In 1882 R.Koch announced to a gathering of physicians in Berlin that he had discovered the true and only causes of consumption in man and animals to be a microscopic plant of low order—the *bacillus tuberculosis.* Though often assailed, this assumption has never been disproven. At the present time it is even accepted by a large part of the laity, that to have tuberculosis we must have the *tubercle bacillus.* Without this germ no consumption. Having determined the cause of consumption, Koch turned his attention towards finding a cure, and a few years later announced that by inoculating phthisical patients with a product of the germ which he called tuberculin he could induce a healing, respectively on encapsuling of the tubercular lesion. His efforts have, however, not been crowned with success. At the Veterinary Institute in Dorpat, Russia, in 1890–1891, tuberculin was tried on notoriously tubercular cattle to note its effect upon consumptive animals. A rise in temperature in every case of 2° F. and over above the normal first drew the attention of veterinarians to its value as a diagnostic agent. In non-tubercular cattle there was no rise manifest. Since that time thousands of cattle have been subjected to a tuberculin test and in nearly every case the value of this product of the *bacillus tuberculosis*, as a diagnostic agent, has been confirmed. The technique of the manufacture of tuberculin may be omitted here; suffice to say that it is the toxic product of the germ of consumption, and if properly prepared contains none of the bacilli themselves. It can, therefore, in no case induce, cause or transmit the disease in any form. Tuberculin is simply a chemical constituent, an inanimate substance, and cannot increase itself in the animal body as a living micro-organism has the power to do.

Prof. Bang, of Copenhagen, Denmark, a close student of animal tuberculosis for many years, has, since 1891, been trying to eradicate the plague from that little kingdom of 2,000,000 souls and 1,960,000 cattle. In his battle with grim phthisis, this agent alone, he says, has placed him in a position to discover tuberculosis in its hidden forms. Since he began his work 53,303 cattle have been subjected to the tuberculin test, of which 20,665 reacted, and were found tuberculous. The effect of tuberculin upon tubercular cattle, as to whether their condition was made worse or not by its use, has often been questioned. To determine this point Dr. Bang made post-mortems on 83 tubercular animals that had been subjected to repeated tuberculin tests. Notwithstanding that among these 83, which were affected in a high degree, in only 4 cases was an acute miliary (embolic) tuberculosis apparent. Even a localized tuberculosis was not made general, in spite of the fact that the cows had been tested several times. We must also bear in mind in this connection that a chronic tuberculosis can at any time become an acute miliary one and lead to a hasty death.

Tuberculin is not an infallible agent. We are at times led by its use to make a false diagnosis. These false diagnoses are of two kinds: either the tuberculin causes a reaction where the animal is not tuberculous, or there is no rise of temperature when the disease is present.

Dr. Eber recently made autopsies upon 503 animals condemned as being tubercular with the tuberculin test. The diagnosis was confirmed in 489 instances, while in 74 cases the lesions of the disease were not found. In Denmark 515 post mortems showed 50 false diagnoses. My own experience has been that, whenever tuberculin caused a rise in temperature in an animal to exceed 2° F., tuberculosis was present, but at times notoriously tubercular cattle do not react to the test. At the present time, however, tuberculin must be considered as the most valuable diagnostic agent that we possess, and by its use alone are we placed in position to discover and control consumption in cattle.

Tuberculosis in our bovine herds is the most generally prevalent and widely distributed of plagues. No country where cattle raising and dairying are the source of wealth is free from its ravages. Especially in lands and districts where cattle cohabit together through a long period of time does it seem to flourish. In localities where cows are kept for dairy purposes, to supply food for human food, the germ of consumption finds a fertile soil upon which to grow and perpetuate itself. While the young beef cattle of our plains and pasture lands are comparatively immune, in the more densely populated milk-producing sections of a country a large percentage of the older milch cows are affected. To give exact statistics as to tuberculosis' prevalency among cattle in our own land would be at this time impossible.

From Dr. Ostertag's observations at the Berlin slaughter-houses it would seem that few old milch cows were free from the disease. He found 75 per cent. of those old dairy veterans harboring tuberculosis. In Denmark the production of milk, butter, and beef is the chief source of wealth and prosperity, and in this country nearly 40 per cent. of the cattle have been found to be tuberculous. The larger the herd the more extended has been the disease. The longer the disease exists in a herd the wider will be its distribution. Of one herd of 208 animals, 80 per cent. of the milch cows reacted to a tuberculin test. One dairy herd in Ohio tested by myself showed 32 per cent. to be affected. The germ of consumption does not seem to be everywhere. Tuberculosis is not a necessary evil. Two herds of the Red Danish race, that were fine specimens of their type, of 38 and 39 head respectively, were found to be absolutely free from the disease. In these herds in-and-in breeding had been extensively practiced; a large number had descended from one cow purchased as far back as 1862. Though the conditions in these instances would seem to favor the development of tuberculosis, they have always been free from tubercular taint.

In the district of Argenmuende, Germany, among 13,000 head of cattle slaughtered none were found to be tuberculous, and in the district of Teltow, among 40,000 head killed, only 15 cases appeared. On the other hand, in the German Empire, on an average, 16 per cent. to 25 per cent. of all the cattle killed at the slaughter-houses have been found to be consumptive.

Although I do not wish to maintain that in the United States the condition of affairs in regard to bovine tuberculosis is as bad as in the older countries, it is my impression that the time has come when something should be done to control this plague, that is always a threat to man and a foe to the cattle industry. I will not touch at this time upon the relationship of animal and human tuberculosis, suffice it to say that consumption of man and beast is one and the same disease, caused by one and the same bacterium, and that it is transmissible mutually from beast to man and from man to beast. Although the natural infection of man, from the animal, has been somewhat exaggerated of late; that such a transmission does occur and is always probable, no man who has given this vast subject thought, can honestly deny.

Though from the flesh of tuberculous animals, if the disease be generalized, an infection *can* take place, from the internal organs (viscera) and from the *milk* the disease is most commonly transmitted. It has been demonstrated that in the milk the germs of consumption have been found, even if the udder be apparently intact; and though the bacilli do not multiply in milk, they can, nevertheless, use this fluid as a convenient means of transportation and to infect susceptible individuals.

Calves and hogs are most commonly infected through bovine milk, and in Denmark, where the milk of cows is used to fatten colts, tuberculosis in horses is not a rare disease. In other countries equine consumption is almost unknown. In calves, hogs, and Danish horses the disease appears usually as a "feeding tuberculosis" of the bowel and mesenteric glands, with secondary nodules in the lungs. It would seem, then, to be indicated that these sources of consumption should be controlled. Against tuberculous organs and milk a sanitary war should be waged. To eradicate these sources of contagion we should have first and before all things a thorough system of meat and milk inspection in every municipality in this broad land. Not the mere espionage of an antiquated, ignorant butcher,or of some one possessed of a political "pull," but a well-equipped and established slaughter-house, where trained men would devote their lives and energies to the inspection of all animals killed and the products thereof. Experts who were trained in the pathology of our meat-producing animals, whose one aim should be to protect the citizens of their city from the chance of becoming poisoned or diseased by the ingestion of nocuous flesh. The dairies of the environing country should be under the rigid control of skilled men well versed in the infectious and contagious diseases of animals. The milkman should be made to not only guarantee his client a certain percentage of solid constituents and butter-fat, but should also be compelled to have his cattle herd subjected to a thorough, searching examination at stated periods, that he may be able to assure his customers that the milk that he leaves at their door is free from the taints of disease, especially of the death-dealing tuberculosis. The latter is only now possible in that we have in that grand discovery of Koch an agent, though not always infallible, upon which great reliance can be placed to unearth bovine tuberculosis in its latent or incipient forms.

IF you want the proceedings of the Nashville meeting of the U.S.V.M.A., in compact form, read the REVIEW.

SPECIFIC CURES IN CERTAIN DISEASES.

By S. H. Ward, V. S., St. Cloud, Minn.

A Paper read before the Minnesota State Veterinary Medical Association.

When invited to subscribe something of interest for this meeting, I was at a loss what to offer the Association; and in accepting the invitation I felt I was incapable of doing justice to any subject pertaining to any particular disease. Our periodicals are full of interesting articles, and cover the results of diligent research and observation on nearly every disease known to science. The thought suggested itself that any essay would be an infliction on you, hence the somewhat unusual departure from the line generally taken at a meeting of this kind. I offer you this paper, trusting you will weigh carefully and take these receipts for what they are worth, and should like it to be distinctly understood that my experience with them is very limited, and, therefore, advise cautious experimentation before putting much faith in them.

It has always been my policy to ask owners what they thought the trouble was when my services have been requested, and oftentimes the cause of the trouble is told unthinkingly, when otherwise it would require considerable pumping, even if we succeeded at all in eliciting any cause from the owner or attendant. If there are any bystanders around, we are informed, in nine cases out of ten, that it's the water, "doctor." We receive this gratuitously, and are called on to express our thanks and deep obligations, when we are further informed that the speaker's "grandfather," or some other remote relative, was the best "cow doctor" in their part of the country, and *he* always used this or did that, and never lost a case. I have suggested to the grandson that maybe he never had a case to lose. I find, however, that any remarks I may make are not accepted readily, and still more vigorous is the resistance when one tries to sit on them, and by adopting the old adage, "Hear, see, and say nothing," I have gleaned the following valuable receipts, which I now offer to you for the first time:

Colic.—Take of patient's manure a small piece, roll in a burdock leaf, and give as a bolus. Relief is obtained in twenty minutes.

Blindness (*Cataract, or other cause*).—Take of unsalted butter two pieces, about the size of a pea, and drop into each ear. A cure may be expected in four days.

Swellings of any description.—Take cow manure, kitchen grease, and salt, equal parts, fry well, and rub into parts every day.

Worm in the Tail.—Make an incision four inches long, close up to root of tail, and another near the end ; fill both with pepper and salt. This may be relied on to draw not only the worm, but four or five dollars from the owner's pocket.

Proud Flesh.—New salt pork bound around the part.

Distemper.—Take of concentrated lye ℥j, and give in urine. Funeral service may be performed inside of twelve hours.

Rheumatism in Hogs.—Hen manure, to be given in feed three times a day.

Spavins, Ringbones, etc.—My best receipt is for spavins, ringbones, and all exostoses—a receipt for which three hundred dollars was given and the exclusive right of operating in the county. For the good work which was done, the operator received a certificate, entitling him to practice as a veterinary surgeon. The donor of this has, he tells me, dozens of specimens in his office of spavins and ringbones, which, in his own words, he "curled out" in two days, and, by his manner, I should judge is very proud of his success, and shows them to would-be customers with considerable verbosity and delight. The mixture is made up of H_2SO_4, HNO_3, āā ℥j, quicksilver, ℥ij, and candies, ℥ss. ; at least my original receipt reads thus, but I presume cantharides is meant. Care must be taken in making up the mixture, or one will be apt to lose interest in any further chemical mixtures. A little of this is to be painted on once a day until growth curls out. No after-treatment is needed, unless it be a new leg or a bolus of ℥j "I-dide of lead," which may be given to counteract any tendency to open joint. This mixture is guaranteed to leave a nice, clean-looking leg, provided operator is cautious and the slough ever heals up. In any case, only a small blemish is left, that only the most fastidious can object to, provided they don't notice it.

Lung Fever.—Teaspoonful of spirits of nitre, poured in the ear once a day.

Poll Evil.—Insert seton in breast, to prevent, I am told, the corruption from reaching the heart, and killing patient.

Impaction of Colon.—Place a handful of snuff back of tongue. It has never failed to give relief.

In conclusion, gentlemen, bear in mind I don't say these receipts are infallible; and, remember, should you have any occasion to make use of them, and are successful, give credit to whom credit is due.

REPORTS OF CASES.

INTERESTING RECOVERY FROM HYDROPS AMNII AND ASCITES.

By M. J. Jones, Veterinarian, Cuba, O.

On July 18th, 1897, I was called to the farm of one Mr. S., located six miles from my office. On arriving was shown a bay mare, weighing about 1200 lbs., about twelve years old, in the recumbent position, and apparently unable to get up. We turned her over and with some difficulty assisted her to her feet. She was suffering considerably, lifting the right hind limb and looking at her flank. On examination I found the right side of the udder swollen hard, tense and hot, extending along the surface of the abdomen; pulse 60, temperature 102°F., respiration considerably increased. Was told she was in the eighth month of gestation and had aborted twice at about this period. I gave her the following anodyne: F. ext. belladonna, ʒ i; tinc. opii, ℥ ss, in a little cold water; emptied bladder with catheter, contents highly colored and deficient in quantity; patient seemed much easier. Prescribed pot. nitras, ℥ ss, twice per day, in drinking water, and left. Owner called on the 19th, saying the patient was worse, having passed a very restless night, lying down and getting up every few minutes, raising hind leg and looking to side; swelling increasing very fast, abdomen giving away and hanging down almost to hock, swelling extending upwards to vulva. Called to see her at 10 o'clock A. M., and found her as before described. After careful examination diagnosed dropsy of amnion and advised tapping per vagina; also requested to have Dr. Myers, V. S., of Wilmington, O., called in consultation, which the owner agreed to. Gave anodyne and waited for Dr. Myers, who arrived about 2 o'clock P. M. After examination the doctor said the diagnosis was correct, in his opinion, but his experience was very limited in such cases; also that he had no treatment to offer better than the one proposed. Patient was lying on her right side and could not get up. We repeated anodyne and inflated os with belladonna. Found envelopes tense and round; could not feel fœtus; punctured chorion with finger; requested the doctor to assist. After finding the opening I had made, he queried, "Shall I go on through?" which I answered in the affirmative. He then proceeded to puncture the amnion by slightly scratching with the finger-nail; the liquor amnii flowed profusely on removing his arm. We made no attempt to draw off fluid, but left the excess to flow through the aperture. Quite a nervous shock followed the operation, the walls of the abdomen collapsing, udder seemed flaccid, liquid continuing to flow for several hours, when the patient moved. Dr. Myers left for home, prognosing a critical condition, with probable fatal termination. I had the patient removed a few feet from the place of operation, clothed comfortably, and then administered nitrous æther and ammonia aromat., followed by fl. ext. belladonna every two hours, in ʒ i doses, and left for the night.

Called at 8 o'clock on the 20th; found patient several yards from where I left her, grazing apparently without pain, appetite good, nervousness subsiding, locomotion fair, abdomen very pendulous, discharge from vagina almost arrested; requested animal removed to barn lot some forty rods away and up quite a steep elevation, which she climbed quite readily, arriving at door-yard without much fatigue; prescribed iron sulphate, gentian rad., āā ʒ ii, twice per day. Thinking system unable to withstand shock likely to follow removal of fœtus, concluded to defer operation until next morning. It was impracticable for me to call next morning, but on arriving at home in the evening about 9 o'clock found order on slate to come immediately; called and found patient prostrate and suffering intensely, just having delivered a fœtus, in which decomposition had set in, which, in my opinion, should have been removed twelve hours before; gave fl. ext. bella., ʒ i. Anticipating metritis, enteritis, peritonitis, laminitis or septicæmia, prescribed spec. tinc. aconite, thirty minims, given in ten-minim doses every three hours; disinfected surroundings, sprayed patient with water medicated with carbolic acid, clothed comfortably, advised quietude, with occasional turning from side to side, with a little water and feed if desired; left for the night.

Called on the 21th at 9 o'clock A. M., and found patient up, with fair appetite, abdomen much more tense, expelling fæces and urine with great difficulty, had abdomen bathed with hot water and neatly bandaged; gave iron and gentian in former doses, also pot. chlo., ʒ ii, twice per day; sprayed patient with carbolized water, covered with sheet, advised light diet with water *ad libitum.* Called on 22d and found patient improving, discontinued chlorate, continued iron and gentian, adding powdered nux, ʒ ss, twice per day.

Called on the 23d and found patient improving, but with swelling on udder and abdomen hard and hot; requested it well rubbed with the following: Unguentum adeps, ℥ i; acidi carbolicum, mx; continued treatment.

Called on 24th, and found patient improving, swelling greatly reduced, appetite good, being able to evacuate per rectum and bladder with more ease, respiration short and rather jerky, with indications of liquids in abdomen (probably caused by long continued pressure on the peritoneum); animal still standing, looking rather depressed, at times rousing up and looking better; added to former treatment pot. iodide, ʒ ii, twice per day, in feed, of which we gave a liberal supply, such as would be easily digested.

Called on 25th, and found patient improving, temperature 102° F., pulse high and rather feeble, respiration short and jerky, animal standing, appetite good, swelling on surface of abdomen much reduced and not so painful to touch, animal showing disposition to move about more, sometimes grazing for quite a while, bowels in fine condition, patient urinating without much pain; examined thorax, because I was satisfied there was but little water there (if any); examined abdomen and decided there was considerable liquid in lower part behind diaphragm, which in our humble opinion accounted for the general disturbance of system.

Being rather prejudiced against the operation of paracentesis abdominis in ascites, and feeling hopeful of being able to remove exudate, and restore health by the use of tonics, hæmostatics, diuretics and discutients, concluded to continue the iron and potassium, with same dose of nux, to strengthen the heart and tone up the nervous system. I caused the bandage to be tightened (which had been attended to every 24 hours), and left for the day.

Called again on 27th and found patient standing under shade tree. On examination found pulse 60 and much stronger than at any time previous; temperature 102° F., respiration 17 and full, apparently without pain, heart much stronger, animal going to water and feed of her own accord, exercise causing little disturbance of the system. Continued treatment, advised liberal feeding, with good grooming and hand-rubbing of abdomen.

Called on 28th, found marked improvement, with exception of swelling on udder, which showed but little improvement, being rather sensitive to the touch; patient quite lively, moving from place to place, shaking herself and rubbing against the trees and other objects, trying to get out of enclosure. Continued treatment, giving one dose of nux, instead of two in the 24 hours, patient still standing.

Called on 30th and found patient had not lain down, temperature $101\frac{3}{5}$ F., seemed to be improving finely, thought best to discontinue iodide for a few days, patient having taken ℥ iii; continued iron and gentian with one dose of nux per day, and liberal feeding, swelling leaving anterior portion of abdomen, but being considerable on udder and posterior portion.

Called on August 4th; patient improving, lying down and getting up at will, with every prospect of a perfect recovery.

I now recall six somewhat similar cases I have treated in the last ten years with the following result (but all appearing in the last month of gestation): One death by metro-peritonitis, three perfect recoveries, one became again impregnated, carrying fœtus full term, foaling without assistance, colt and mother living and doing finely; two imperfect recoveries, being unable to restore peritoneum to normal condition. The animal is living and performing daily labor.

OBSTRUCTION OF SMALL INTESTINE OF DOG BY BLOCK OF WOOD.

By Chester Miller, V. S., Ottumwa, Iowa.

I very much enjoy the monthly visits of the American Veterinary Review, and consider it my duty, as well as every other progressive veterinarian, to contribute as far as possible such information as will be interesting and instructive to its many readers. In order to effect this result, I shall assist by sending in the report of a case which came under my observation last month. I noticed lately several very interesting cases reported on diseases and treatment in dogs, and being rather a warm friend of the noble canine and his welfare, I shall report the following case.

On June 13th, the owner of a fine pointer dog called at my office to consult me, as he was anxious to know what was wrong, and whether anything could be done for his relief. From his description of the case, I was unable to give him anything like an intelligent diagnosis, and went to his residence to make a thorough examination.

I found him lying in his kennel, apparently asleep, but on calling him by name, he arose, and with the greatest effort and care managed to crawl out and come to us. He manifested every symptom of acute abdominal pain, but I could not understand or locate the exact situation of his trouble. He had been ailing some four days prior to my visit, during which time purgatives had been given and acted freely ; but he refused to eat anything at this time, except to lap a little milk and water, persisting throughout in lying down and keeping as quiet as possible.

I prescribed simple anodyne treatment that evening, and returned next day, to find him no better. Followed up with similar treatment, with the addition of hot woollen cloths around his body, which seemed to give him some relief.

To make a long story short, he continued to get weaker and weaker until on the night of the 20th he passed away.

The owner being very anxious to know the cause of death, came to the office next morning and desired a post-mortem. On opening the abdominal cavity I soon found the cause of death. In the small intestines, about three feet from the pylorus, was lodged a piece of wood, one inch and a quarter square, which of course had caused a severe inflammation of some four or five feet of the bowel, and a considerable portion of the peritoneum.

I at once thought of the X rays, and considered this a good case on which to try it, and having located the obstruction, to perform laparotomy, and possibly save the much-prized dog.

RUPTURED BOWELS CAUSED BY CYST.

By T. F. MOYLE, V. S , Waterford, Wis.

On May 17, 1896, I was called to see a mare, said to be sick with colic. She was a Clydesdale, with foal at side, six weeks old. Owner said she had never been sick before. She was standing in the corner of a box stall, looking rather dumpish, with some abrasions about the head, as if done while cast. The foal was continually sucking, indicating non-secretion of milk. Temperature $105_{\overline{5}}^{\circ}$, pulse 60, respirations normal; entire absence of peristaltic action, membranes injected and somewhat icterous. Diagnosis, impaction of colon. Gave aloetic purge.

On 18th called to see how patient was doing; found her in much the same condition, no passage from bowels, eating and drinking a small amount, with no colicy pains. Gave olei lini, Oi, calomel, ʒ i, olei terebinth. ℥ i; left two drachms calomel, to be given 6 hours apart.

On 19th mare in much the same condition, taking some food, no colicy pains, no passage from bowels. Gave rectal injections; Barb. aloes, ℥ i, in bolus, which operated next day. Mare seemed somewhat better. Did not see her again until the 24th, when I was called, saying the mare was much worse. On arrival mare had been dead half an hour. Held autopsy, and on opening the abdomen a great quantity of food and water came rushing out. Having a wound on my left hand could not manipulate the bowels as I would like to have done. The peritoneal coat and the intestines were gangrenous. At the juncture of the ileum and the cæcum there was a cyst the size of a 16-quart measure. In dividing the same its interior resembled the inside of an orange in color and consistency. There was also a rupture of the intestines where the cyst adhered to the ileum.

PYÆMIC ABSCESS IN LUMBAR REGION, CAUSING PERITONITIS AND DEATH IN A COLT TWO MONTHS OLD.

By T. F. MOYLE, V. S., Waterford, Wis.

On August 3, 1897, I was called to attend a sick colt, said to have been in good health from time of birth, fat and well developed; found on morning of 3d down, seemingly not able to rise; owner gave a dose of brandy; came to town, ordered me out to see it. When he arrived home found colt up, walking around, seeming much improved, as he expressed it. Gave another dose of brandy, went to his breakfast; on returning, found colt dead. I arrived soon after and held an autopsy. In the abdominal cavity there was a large quantity of bloody water, peritoneal coat in shreds; in the left lumbar region, behind the kidney, an abscess the size of a two-quart measure adhered to the pelvic bones. The cremaster muscle and bladder were also involved by adhesions. Running through the centre of this abscess was a vein forming a well-defined thrombus, the lumen of which was intact at least two-thirds of the distance through the abscess; balance taken up by the thrombus. On the outside of the abscess the vein was three times its normal size. The abscess was formed of distinct layers resembling an onion. From the thrombus to the outside, two-thirds of the distance, there was no pus; the balance was filled with a dirty-grey bad smelling pus and detritus. The kidneys were in normal condition; also other organs, with exception of bowels, which were inflamed. My theory of this case is that the infection took place from the umbilical vein at the time of birth, but cannot account for the thrifty condition of the foal.

TO ADD TO THE HISTORY OF FRACTURES.—In the *Veterinary Journal*, from every-day notes by Mr. H. B. Elliot, are found the records of a few cases of fractures, which, leaving aside their ætiology and their symptoms, are of special value in demonstrating the value of the work of nature (almost left alone) in the repair of those lesions: *Case 1.*—A fracture of the metacarpal bone above the fetlock. Absolutely no treatment. Recovered comparatively sound. Toe of the injured leg slightly turned outward and a callous at the point of fracture, are the only blemishes left. *Case 2.*—Fracture of the metatarsus. Stiff leather splint from the hock to the fetlock, held in place by sidestraps. Complete recovery in three months. *Case 3.*—Mare in running away got injured and had a large swelling on the near-side of the chest. This was lanced. Ten days later, the swelling was still there and hard. Incision of the walls and digital exploration permitted the removal of several fragments of the first rib. Recovery. *Case 4.*—A Californian horse, six years old, had a heavy fall, after which had a swelling over the seat of the ilium, shortness of the limb, difficult extension, pain on pressure per rectum. He was slung, had soothing applications, several blisters and recovered fairly sound, but weak. He died ultimately with osteo-porosis by fracture of the maxillary bone. *Case 5.*—A transverse fracture of the ulna, with dislocation at the elbow; destroyed. *Case 6.*—Jersey calf with fracture of the radius and cubitus. Plaster splint, which, being uncomfortable to her by the weight, was replaced by lighter one of wood and calico bandages. Recovery complete, and use of the leg fearlessly after a month.

THE TUBERCULIN TEST IN MASSACHUSETTS.

REPORT OF THE EXPERTS EMPLOYED BY THE LEGISLATIVE COMMITTEE.

(*Continued from page 334.*)

Having published in the August REVIEW the reports of Drs. Ernst, Smith, and Kinnell, we present in this number the lengthy one of Dr. Billings, which, with that of Dr. Wood, to be published in the October issue, will complete the report made to the Legislature of Massachusetts by its special committee.

REPORT OF FRANK S. BILLINGS, M.D.

GRAFTON, MASS., May 5, 1897.

To the Honorable Members of the Massachusetts Legislature, appointed to examine certain cows from Lowell and vicinity which had been subjected to the "tuberculin test," and to engage "experts" to conduct such an examination, as to the reliability of the "test."

GENTLEMEN.—In accordance with your request, I was present and took part in the examination of 130 milk cows, 129 of which, it was claimed, were tuberculous by the tuberculin test, said examination having taken place on April 13, 14, 15 and 21, and again on May 4 of 20 cows selected from those "which did not react" from the same farms as those previously examined, and beg herewith to submit to your honorable consideration the accompanying report.

The study of the results of our examinations forces the following conclusions:—

1. That, if the position of the extreme bacteriologists and that of the Massachusetts law on the subject be scientifically reliable, and founded on undisputable fact, and every cow (or bovine) in which one solitary tubercle is found, on the most exact observation at slaughter, is to be considered as "dangerous meat," and unsalable for human food, and in life such a cow is dangerous as a milk-producer to those who should consume her milk,—then I say that the tuberculin test is a failure and deceptive, and as dangerous a snare as the disease is claimed to be, for we have seen that it let seven "vile sinners" escape.

In this connection it is an undisputable fact that, if bovine tuberculosis is as dangerous to cattle and man as claimed by some and endorsed by the Massachusetts law, both species would long since have perished off the face of the earth, according to that beneficent and infallible principle, the survival of the fit and gradual destruction of the unfit.

A very serious weakness in the tuberculin test is that it in no way aids the physical diagnosis (ordinary examination) in indicating the amount of disease present in each individual, as you had ample opportunity to observe. On the other hand, even though not infallible, the tuberculin test must still be pronounced a most valuable agent in determining the extent of tuberculosis in our cattle, for which the physical examination is practically valueless; but, again, it must be emphasized that "the test" is absolutely no guarantee that a given animal is "*free from tuberculosis*," and hence no reliable agent by means of which to keep tuberculous cattle out of the State, or farmers from purchasing them. With probably but one exception (tag No. 9173, belonging to Mr. Merrill), in which the solitary tubercle was dead and calcified, the disease would have gone on extending, and in the end every one of the other six of the tuberculous cows which did not react could become a centre of infection to healthy cattle, if in a barn with them.

I wish to impress on you that in cattle *it is the manure* and not "sputum" which is and must be considered the dangerous factor in tuberculous cattle, and by which the disease is spread in stables. This fact is again of vastly more importance than the milk or flesh, if the dangers of bovine tuberculosis are as claimed by many. On the contrary, *cowherds* and dairy maids are no more prone to tuberculosis than other people. The American Indian, who is not a milk consumer, is remarkably susceptible to tuberculosis, *on domestication.*

Again, do not forget that not one case of tuberculosis in man can be attributed to that of cattle with that critical exactness which can only be termed "scientific." Until every other possible cause has been exactly excluded, the verdict of the cow must be still that of the Scotch jury, "Not proven." The State cannot afford to make absolute mandatory laws on such evidence and such a verdict, and yet that is just what has been done.

Of the 130 cattle first examined, considering the question of tuberculosis alone, and assuming all other conditions as "marketable," every cow but tag No. 9698 would be considered as suitable for consumption in Europe, and probably that one as "second-class meat," and the majority of that 130, and all of the second lot, the 20 non-reacting cows, would be passed as "No. 1" beef in any market in Europe.

Not one of those 7 cattle found tuberculous among the 20 non-reacting could be considered as an immediate source of danger to man or cattle, in the condition it was at the time of examination.

Of the 150 cows examined, 134 were faintly tuberculous, or about 90 per cent. This indicates that about 75 per cent. of the bovine milking machines, tied to a chain six months, sometimes for twelve in a year, and forced "for all there is in them" to supply the demands of our cities, must be tuberculous.

The "war cry" that bovine tuberculosis is the chief, or even an essential, cause of human tuberculosis is, "*No bacillus, no tuberculosis*." That is one of those dangerous half-truths which are sometimes more misleading than serious errors. *The whole truth is, no constitutional predisposing weaknesses, no enervating manner of life, proper ventilation and healthy exercise,—no tuberculosis, let the bacilli be present or not.*

A most important lesson to be derived from the 7 tuberculous cows which did not react is the practical impossibility of relying on the tuberculin test, even when combined with physical examination, in the purchase of cows, that they will be free from the disease. The majority of those 7 cattle, while none were dangerous at the time of slaughter, would eventually develop general tuberculosis, and, if only one such be present, become the centre of infection for an otherwise free stable of cows so far as tuberculosis is concerned, as previously stated.

The chief work for the State would and should be to place the sanitary care of all cow stables in the control of the Cattle Commission, and to have a quarterly revision of the cows by competent district veterinarians, and the stables kept up to a certain degree of cleanliness. All animals suspicious on physical examination might, or should, then be treated according to a common-sense law. The method of quarantine, as I have seen it practised, is practically valueless, save in preventing the sale of animals. Suspected or tested animals have been left in the same stable with other cattle, taken care of by the same men, and their manure tracked all over the stable and premises, as of old. While not absolute as a test, as shown, still tuberculin is a valuable test, most especially to the breeder of fancy stock, and even the farmer should not neglect it if there is any possibility of raising his calves, or selling them to be raised. All "reacting" animals should certainly be excluded from breeding. For all other purposes I do not consider tuberculin either a sufficiently reliable or necessary "test," when common-sense is applied to the use of such animals as milk-producers or for flesh-consumption.

Again, as to the milk of the majority of the 130 cows first examined and all of the last 20, I think that every susceptible person, with predisposing weaknesses, is a thousandfold more exposed to the danger of infection in our city streets, in public conveyances, and the poorer classes in all their surroundings, than from the consumption of milk from such cows.

If this examination is any criterion of the percentage of tuberculosis in the dairies supplying our cities and towns, then there is scarcely a person who does not take tubercle bacilli into his system more or less frequently. As of the seeds which fall on stony ground and fail to develop, so of the tubercle bacilli; unless the individual supplies a suitable soil for them, they pass on harmless, or die in the juices of the digestive tract. In considering this question, nothing is so important as the power of resistance of the strong, rugged organism, and the many conditions unfavorable to the development of the bacilli. It is important to remember that the infection of man by bovine tubercle bacilli is not proven, nor is the absolute identity of the bacilli of man and cattle. Efforts to transmit human tuberculosis to cattle have signally failed in producing any such thing as general tuberculosis in cattle.

It must be evident to you that the State cannot control the introduction of absolutely tuberculosis-free cattle from other States, even if "tested," for the repletion of our dairies, and that under existing conditions the driving of cattle from one State to another is a comparatively easy matter. On this account the State paying the most for "reacting" cattle is sure to have the most to pay for.

Finally, so long as cows have to be treated as mere machines; so long as they have to be confined for practically six months in the year, and often for the whole twelve months, in order to get all possible out of them; so long as no attention is paid to the exclusion of suspicious stock from breeding; so long as this whole system continues, the State may proceed on its present plan, but in the end it will find it is trying to bail out the Atlantic with a tin dipper, paying a terrible price for the experience, but doing little to lessen the disease.

Thanking you for the confidence you have honored me with, and trusting to have merited the distinction, I remain,

Your obedient servant,

FRANK S. BILLINGS, M.D.

The following post-mortem findings accompany Dr. Billings' report:

Examination of Tuberculin-tested Cattle from Lowell and Vicinity at Brighton Abattoir, April 13, 14, 15 and 21, and May 4, 1897.

NUMBER OF EXAMINATION.	Number of State Tag.	Name of Owner.	ORGANS EXAMINED.			
			Glands of Throat.	Lungs and Glands.	Liver and its Glands.	Udder and its Glands.
1	10224	A. J. Thissell	Tuberculous	Glands tuberculous	Nothing found	Nothing found.
2	10203	“ “	Nothing found	“ “	“ “	“ “
3	9622	C. E. Jones	“ “	“ “	“ “	“ “
4	9697	Osborn Merrill	“ “	“ “	“ “	“ “
5	10254	“ “	“ “	“ “	Tuberculosis in liver.	“ “
6	9677	“ “	Tuberculous	“ “	Nothing found	“ “
7	10214	“ “	Nothing found	Glands and lungs tuberculous	Tuberculosis in liver.	“ “
8	9693	C. E. Jones	Tuberculous	“ “ “	“ “	“ “
9	10261	Osborn Merrill	Nothing found	Glands tuberculous	“ “	“ “
10*	—	——	——	——	——	——
11	9640	C. E. Jones	Nothing found	Glands tuberculous	Glands tuberculous	Nothing found.
12	10234	Osborn Merrill	Tuberculous	Glands and lungs tuberculous	Liver tuberculous	“ “
13	10237	“ “	Nothing found	Lungs and glands tuberculous	Nothing found	“ “
14	9667	“ “	“ “	“ “ “	Glands tuberculous	“ “
15	10288	“ “	“ “	“ “ “	Nothing found	“ “
16	9630	“ “	“ “	Glands only	“ “	“ “
17	9637	“ “	“ “	“ “	“ “	“ “
18	10262	“ “	“ “	“ “	“ “	“ “
19	10298	“ “	“ “	Glands and lungs tuberculous	“ “	“ “
20	9678	“ “	Tuberculous	“ “ “	“ “	“ “
21	9670	F. A. Fox	Nothing found	Glands tuberculous	“ “	“ “
22	9681	“ “	“ “	Glands and lungs tuberculous	“ “	“ “
23	9639	“ “	“ “	“ “ “	“ “	“ “
24	9662	“ “	Tuberculous	“ “ “	“ “	“ “
25	9679	Osborn Merrill	Nothing found	Glands tuberculous	“ “	“ “
26	9671	F. A. Fox	Tuberculous	Lungs and glands tuberculous	“ “	“ “
27	9634	Osborn Merrill	Nothing found	Glands tuberculous	“ “	“ “
28	9675	F. A. Fox	Tuberculous	Lungs and glands tuberculous	“ “	“ “
29	9695	“ “	“	“ “ “	“ “	“ “
30	9645	Osborn Merrill	Nothing found	Glands tuberculous	“ “	“ “
31	9673	F. A. Fox	“ “	Glands and lungs tuberculous	“ “	“ “

32	9631	“ “	Tuberculous	Glands and lungs tuberculosis	“ “	“
33	9611	“ “	Nothing found	“ “ “	“ “	“ “
34	9615	“ “	“ “	“ “ “	“ “	“ “
35	9674	“ “	“ “	Glands tuberculous	“ “	“ “
36	9646	“ “	Tuberculous	Glands and lungs tuberculous	“ “	“ “
37	9614	“ “	Nothing found	“ “ “	“ “	“ “
38	10284	Osborn Merrill	“ “	“ “ “	“ “	“ “
39	9601	F. A. Fox	“ “	“ “ “	“ “	“ “
40	9626	Osborn Merrill	“ “	“ “ “	“ “	“ “
41	10289	“ “	“ “	“ “ “	“ “	“ “
42	10264	N. L. Peavy	“ “	Nothing found	Glands tuberculous	“ “
43	9659	C. E. Jones	“ “	Glands and lungs tuberculous	Nothing found	“ “
44	9683	“ “	“ “	Glands tuberculous	“ “	“ “
45	10287	Osborn Merrill	Tuberculous	Glands and lungs tuberculous	Gland tuberculous	“ “
46	9608	F. A. Fox	Nothing found	Lungs tuberculous	Nothing found	“ “
47	9617	C. E. Jones	“ “	Lungs and glands tuberculous	“ “	“ “
48†	9629	F. A. Fox	“ “	Nothing found	“ “	“ “
49	10231	Osborn Merrill	“ “	Lungs and glands tuberculous	“ “	“ “
50	9620	C. E. Jones	“ “	Lungs tuberculous	“ “	“ “
51	10293	Osborn Merrill	“ “	Lungs and glands tuberculous	“ “	“ “
52	9698	F. A. Fox	“ “	“ “ “	“ “	“ “
53	9609	“ “	“ “	“ “ “	“ “	“ “
54	10232	Osborn Merrill	Tuberculous	“ “ “	“ “	“ “
55	9621	“ “	Nothing found	Glands tuberculous	“ “	“ “
56	9613	C. E. Jones	“ “	Lungs tuberculous	“ “	“ “
57	10243	Osborn Merrill	“ “	Glands and lungs tuberculous	“ “	“ “
58	10285	“ “	Tuberculous	“ “ “	“ “	“ “
59	9665	F. A. Fox	Nothing found	“ “ “	“ “	“ “
60	9638	“ “	“ “	“ “ “	“ “	“ “
61	9660	“ “	“ “	Glands tuberculous	“ “	“ “
62	9656	“ “	“ “	Glands and lungs tuberculous	“ “	“ “
63	9666	“ “	“ “	“ “ “	“ “	“ “
64	9682	C. E. Jones	Tuberculous	“ “ “	“ “	“ “
65	9605	F. A. Fox	“	“ “ “	“ “	“ “
66	9658	Osborn Merrill	“	“ “ “	Gland tuberculous	“ “
67	9625	F. A. Fox	Nothing found	Gland tuberculous	Nothing found	“ “

* Did not react. Should not have been sent. Hay wire in stomach and puncturing organs of chest.

† A large tuberculosis centre in vicinity of stifle-joint, left leg.

Examination of Tuberculin-tested Cattle, etc.—Continued.

NUMBER OF EXAMINATION.	Number of State Tag.	Name of Owner.	ORGANS EXAMINED.			
			Glands of Throat.	Lungs and Glands.	Liver and its Glands.	Udder and its Glands.
68	9603	F. A. Fox	Nothing found	Glands tuberculous	Nothing found	Nothing found.
69	9619	" "	" "	" "	Gland tuberculous; abscess in liver, nature uncertain	" "
70	9607	" "	" "	" "	Nothing found	" "
71	9618	" "	" "	Glands and lungs tuberculous.	" "	" "
72	9604	" "	" "	Glands tuberculous	" "	" "
73	9612	C. E. Jones	" "	Nothing found	" "	" "
74	9660	F. A. Fox	Tuberculous.	Lungs and glands tuberculous.	" "	" "
75	9684	" "	"	" " "	" "	" "
76	10300	N. L. Peavy	Nothing found	" " "	" "	" "
77	9650	F. A. Fox	" "	" " "	" "	" "
78	9657	" "	" "	Glands tuberculous	" "	" "
79	9668	" "	" "	Lungs and glands tuberculous.	" "	" "
80	9672	" "	" "	" " "	" "	" "
81	9635	" "	Tuberculous.	" " "	" "	" "
82	9624	" "	Nothing found	" " "	" "	" "
83	9627	" "	" "	" " "	Abscess in liver, probably tuberculous	" "
84	9606	" "	" "	" " "	Tuberculous abscess in liver	" "
85	9652	" "	" "	" " "	Nothing found	" "
86	9700	" "	" "	" " "	" "	" "
87	9676	" "	" "	Glands tuberculous	" "	" "
88	9669	" "	Tuberculous.	" "	Liver tuberculous	" "
89	9602	" "	"	Glands and lungs tuberculous.	Nothing found	" "
90	10266	Osborn Merrill	"	Glands tuberculous	" "	" "
91*	9685	R. S. Fox	Nothing found	Nothing found	" "	" "
92	10222	E. T Fox	" "	Gland tuberculous.	" "	" "
93	9632	R. S. Fox	" "	" "	" "	" "
94	9680	" "	" "	Gland and lungs tuberculous	" "	" "

95	9628	“ “	“ “	Glands tuberculous	“ “	“ “
96	9644	“ “	“ “	Glands and lungs tuberculous	“ “	“ “
97	9692	“ “	Tuberculous	“ “ “	Gland tuberculous	“ “
98	10238	F. P. Fox	“	“ “ “	“ “	“ “
99	9691	R. S. Fox	“	Glands tuberculous	Nothing found	“ “
100	10256	E. T. Fox	Nothing found	Glands and lungs tuberculous	Glands tuberculous, crural glands also.	Glands tuberculous.
101†	10269	D. S. Fox	Tuberculous	“ “ “	Nothing found	Nothing found.
102	9664	R. S. Fox	Nothing found	Glands tuberculous	“ “	“ “
103	9663	R. S. Fox	“ “	Glands and lungs tuberculous	“ “	“ “
104†	10294	F. P. Fox	Tuberculous	Glands tuberculous	“ “	“ “
105†	10259	“ “	Nothing found	“ “	“ “	“ “
106	10271	Mr. Brown	Tuberculous	“ “	“ “	“ “
107	10213	D. S. Fox	Nothing found	“ “	“ “	“ “
108	10218	F. P. Fox	“ “	Glands and lungs tuberculous	“ “	“ “
109	9693	R. S. Fox	Tuberculous,	Nothing found	“ “	“ “
110	10221	E. T. Fox	Nothing found	Gland tuberculous	“ “	“ “
111	10208	D. S. Fox	“ “	“ “	“ “	“ “
112	10239	E. T. Fox	“ “	“ “	“ “	“ “
113	9643	R. S. Fox	Tuberculous	Glands and lungs tuberculous	“ “	“ “
114	9687	“ “	Nothing found	Gland tuberculous	Glands tuberculous	“ “
115	10270	D. S. Fox	Tuberculous	Glands and lungs tuberculous	Nothing found	“ “
116‡	10265	F. P. Fox	Nothing found	“ “ “	“ “	“ “
117†	10217	“ “	“ “	Glands tuberculous	“ “	“ “
118	9623	R. S. Fox	“ “	Lungs and glands tuberculous	“ “	“ “
119	9698	“ “	“ “	“ “ “	Glands & liver tub'c's	“ “
120	10277	E. T. Fox	“ “	Glands tuberculous	Nothing found	“ “
121‖	10266	“ “	“ “	Nothing found	“ “	“ “
122	9610	R. S. Fox	“ “	“ “	“ “	“ “
123	10219	D. S. Fox	“ “	Glands tuberculous	“ “	“ “
124	9688	R. S. Fox	“ “	Nothing found	“ “	Gland tuberculous
125	9655	“ “	“ “	Glands tuberculous	“ “	Nothing found.
126	9616	“ “	“ “	Glands and lungs tuberculous	“ “	“ “
127	10279	E. T. Fox	“ “	“ “ “	“ “	“ “
128†	9633	R. S. Fox	Tuberculous	Nothing found	“ “	“ “
129	10263	E. T. Fox	Nothing found	Gland tuberculous	“ “	“ “
130	9654	R. S. Fox	Tuberculous	Lungs and glands tuberculous	“ “	“ “

---

* A questionable abscess in liver. † Mesenteric or intestinal glands tuberculous. ‡ Calf. ‖ One tubercle in gland of shoulder (axillary).

Examination of Twenty Cows from Same Herds, which failed to react in the Tuberculin Test, Brighton Abattoir, May 4, 1897.

NUMBER OF EXAMINATION.	Number of State Tag.	Name of Owner.	ORGANS EXAMINED.			
			Glands of Throat.	Lungs and Glands	Liver and its Glands; Intestinal Glands.	Udder and its Glands.
1	9103	Mr. Thissell	Nothing found	Nothing found	Nothing found	Nothing found.
2	9145	Mr. Jones	“ “	Glands tuberculous	“ “	“ “
3	9132	Mr. Merrill	“ “	“ “	“ “	“ “
4	9158	Mr. Thissell	“ “	Nothing found	“ “	“ “
5	6576	Mr. Merrill	“ “	“ “	“ “	“ “
6	9137	Mr. Fox	“ “	“ “	“ “	“ “
7	9117	Mr. Thissell	“ “	“ “	“ “	“ “
8	9194	“ “	“ “	“ “	“ “	“ “
9	9524	Mr. Jones	“ “	“ “	“ “	“ “
10	6558	Mr. Thissell	“ “	“ “	“ “	“ “
11	9184	Mr. Fox	“ “	“ “	“ “	“ “
12	9101	“ “	“ “	“ “	“ “	“ “
13	6530	Mr. Thissell	“ “	“ “	“ “	“ “
14	9162	Mr. Jones	“ “	Glands tuberculous; one small node in right lung	“ “	“ “
15	9173	Mr. Merrill	“ “	One dead, calcified tubercle in bronchial gland	“ “	“ “
16	9167	Mr. Thissell	“ “	Nothing found	“ “	“ “
17	9119	Mr. Jones	“ “	One tubercle in gland	“ “	“ “
18	9104	Mr. Thissell.	“ “	Glands tuberculous; tubercles mostly calcified	“ “	“ “
19	9176	Mr. Jones	“ “	Nothing found	“ “	“ “
20	6587	Mr. Merrill	“ “	Glands tuberculous	“ “	“ “

Whole number examined	150
Found tuberculosis	134

Tuberculous. 7 out of 20.

Did not react to tuberculin, 34 per cent.

Of the whole number, 90 per cent. were tuberculous.

SUMMARY OF EXAMINATIONS HELD APRIL 13, 14, 15 AND 21.

Per Cent of Organic Infection in the Cattle, per Gross Examination.

Out of 130 cattle:—

The glands of the head were found tuberculous in	30
The lungs were found tuberculous in	3
The lymph-glands of the lungs were found tuberculous in	45
The lymph-glands and the lungs were found tuberculous in	72
The livers were found tuberculous in	6
The glands of the liver were found tuberculous in	8
The glands and the liver were found tuberculous in	4
The glands of the udder were found tuberculous in	2

The udder was free from tuberculosis in all the above cattle.

Tubercles found in the vicinity of the stifle in 1 case, *and not elsewhere.*

Tubercles found in the crural glands in 1 case (that is inside the hip basin).

Tubercles found in the mesenteric glands in 5 cases, but not carefully looked for, as they had been found elsewhere in the same animal.

Tubercles found in the *axillary or shoulder gland once, and not elsewhere.*

Tuberculosis not found in 3 cases that reacted on gross examination, Nos. 73, 91 and 122.

In No. 10 “no reaction” reported, and no tuberculosis seen. Extensive lesions in organs of the chest from nails in stomach.

(*To be continued.*)

“DROPPED ELBOW” IN THE HORSE.

AN INTERESTING CASE, WHOSE LESION IS THE SUBJECT OF VARIOUS OPINIONS.

By E. HANSHEW, JR., D.V.S., Brooklyn, N. Y.

On Sunday, June 2, 1897, I drove my chestnut gelding, which was, and had been, in perfect health and condition. A shower had caused the pavements to be somewhat slippery, and when within a few blocks of home, the animal's left forefoot slipped, not more than six inches directly forward. He continued his trot without lameness, but, in a block or so, began to sweat and go lame and lamer, until when three blocks from home I had to take him out, and it was with the greatest difficulty that he carried himself to his stall.

The point of the elbow was dropped fully nine inches from its normal position, and a distinct depression was seen extending from the posterior border of the scapula to the olecranon. The knee and fetlock were in extreme flexion and only the extreme point of the toe rested on the floor. He suffered intense pain during the rest of that day, but after that laid down and got up and ate well, and showed no sign of pain, but was unable to draw the leg under him, though he could lift it forward. By pushing the knee back and lifting the olecranon, I could place the leg in its normal position, and he could stand on it until he shifted his weight, when it would drop back to the position described. The flexors of the phalanges seemed to be tense and somewhat rigid.

I allowed him to stand in a box stall for four or five weeks, during which time there was not the slightest improvement.

Then, in one night, he made a decided gain, and that day I blistered the region of the extensors of the forearm and antea and postea spiratus muscles. Improvement was very rapid, so that about the fourth day after the blister was applied the limb was carried to its normal position at times.

During the next two weeks he came to walk almost sound, and is now enjoying a season at pasture, though when I last saw him the hollow described was still persisting.

Diagnosis.—I believed there was a rupture of the long extensor of the forearm. Others, as will be seen, sought a different explanation.

I invited two brother practitioners to inspect the case, and their impressions they have been kind enough to give herewith.

I would be much interested to hear from any others, what they think may have taken place to cause so suddenly, such grave symptoms, and after so long a time such sudden improvement.

SOME INTERESTING EXPERIENCES WITH THIS AND KINDRED AFFECTIONS.

By GEO. H. BERNS, D.V.S., Brooklyn.

The case of dropped elbow reported by Dr. E. Hanshew, Jr., in this issue, which, through the courtesy of Dr. H., I had the privilege of seeing, is of more than ordinary interest to me, by reason of the fact that I have seen a number of cases of a similar character in both front and hind extremities during the past eighteen years, some of which were destroyed and postmortem examinations made, while others were allowed to live and got well.

In 1880, my second year in practice, four cases of "dropped point of hock" in heavy draft horses came under my observation, all of which were due to accidental causes and presented the following symptoms: while in a perfect state of rest nothing particularly abnormal could be detected, but the moment the patient was made to move and place weight upon the affected limb, the thigh would become enormously elongated, the metatarsus would bear upon the tibia, and the point of the hock (summit of os calcis) would drop to within five or six inches of the floor. These cases were diagnosed as "rupture of the gastrocnemius muscle," and, as recovery seemed impossible, the first three cases were destroyed; and in two cases in which post-mortems were made, the diagnosis was fully confirmed. The fourth case, which, in addition to all the symptoms above mentioned, presented well-marked signs of osteo-porosis, was, although against my advice, sent to the country, and, strange as it may seem, in four months' time the affected limb had completely recovered; and, while the enlargement of the lower maxillary and facial bones still remained, the animal's general health appeared to be good, and he showed none of the characteristic constitutional symptoms of osteo-porosis. Unfortunately the owner disposed of his horse at this time, and I lost all track of him.

Since that time, although constantly engaged in active practice, I have not met with a single case of dropped hock, but have seen a few cases of dropped elbow, such as described by Dr. Hanshew. Remembering my experience with Case No. 4, of dropped point of hock, these shoulder-lame horses were placed under treatment, such as is commonly employed, and all of them made good, serviceable recoveries in from two to four months' time.

From these cases the interesting question arises: Is it possible for the gastrocnemius muscle of the hind leg, and for the triceps extensor brachii of the shoulder, when ruptured or torn away from their attachments to the bones, to unite or form adhesions with adjacent structures of sufficient strength to bear the animal's weight, and cause no lameness or inconvenience under the conditions in which the last-named cases were placed? or did we have simply paralysis of the muscles from over-distension, or other local causes, in all but the first two cases in which post-mortem examinations were made?

ANOTHER THEORY OF THE LESION IN DR. HANSHEW'S HORSE.

By Roscoe R. Bell, D.V.S., Brooklyn.

In that commendable spirit of fraternity which should exist among fellow-practitioners, which, by the way, is characteristic of Brooklyn veterinarians, and which always results in much benefit to those who participate in it, Dr. Hanshew was good enough to invite me to examine the patient whose peculiar accident and symptoms he has so faithfully described, and I confess that I have taken a great interest in the case, for the reason that I had never before seen in practice anything simulating such a condition. It is true Dr. Berns had a few weeks previously shown me a horse which was in a convalescent state and had regained the use of his shoulder muscles, showing simply the evidences of a very artistic operation of firing, the description of whose previous condition exactly agreed with Dr. H.'s horse.

It was explained by the doctor as a recovery from rupture of the extensors of the forearm, and as the principal consequence of the lesion was atrophy rather than inflammation and swelling, I was perplexed to understand how recovery could possibly have taken place. When, therefore, another exactly similar case was produced, showing at the time of my examination, no pain, no swelling, no constitutional symptoms—simply an inability to bear weight or to support the lower three-fourths of the leg, from the olecranon downwards, with distinct atrophy or depression in the mass of thick powerful extensors, I naturally felt interested to know the ætiology and exact location of the injury. At the time I was laboring with the idea of paralysis, and finally expressed that conviction to Dr. H., and subsequently the specific opinion that the paresis existed in the radial nerve, which I find described in Dollar's translation of Möller's "Veterinary Surgery," page 457, where the author describes symptoms gathered from some twenty clinical cases. This nerve supplies the muscles which were conceded to be the seat of the affection, and the absence of any symptoms or sequel of laceration, together with the sudden recovery, makes this diagnosis very clear to my mind.

In Chauveau's "Comparative Anatomy of the Domesticated Animals," the following paragraphs occur in the description of the radial nerve: "In its course it successively gives off (1) Before leaving the internal face of the limb, to pass beneath the mass of the extensor muscles of the forearm, a very thick fasciculus, composed of several branches—descending and ascending. The latter bend round the terminal tendon common to the latisimus dorsi and teres major, to become lost in the body of the great extensor; the others reach either the long and middle extensors, or the inferior portion of the principal muscle—the large extensor. (2) Behind the arm filaments to the caput medium and anconeus, and several cutaneous ramuscules, disengaged from beneath the former muscle, that descend beneath the skin on the anterior face of that part. (3) In the antibrachial region, branches to the extensor metacarpi magnus and flexor metacarpi externus, and the two extensors of the digit. In brief, we see that the radial nerve is distributed to, and therefore stimulates, the whole mass of the extensor muscles of the forearm and foot, besides a flexor of the latter; and that it endows the integument of the anterior antibrachial region with sensibility."

I fully agree with Dr. Hanshew that, as a favorable prognosis can usually be given, it is a most interesting condition to the practitioner, and its discussion in the periodicals can but be of the greatest benefit. Being in the position to be of assistance to my fellow-practitioners in this respect, I cheerfully offer the pages of the REVIEW for such a purpose.

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By W. V. BIESER, D.V.S., New York City.

THE PROBABLE IDENTITY OF THE BACTERIA OF APTHOUS STOMATITIS OF HUMAN BEINGS AND OF FOOT-AND-MOUTH DISEASE OF CATTLE.—Bussenius and Siegel investigated the question if the cause of apthous sore throat of human beings and of foot-and-mouth disease of cattle were identical; they found a bacillus morphologically and biologically identical with the *bacillus coli communis*, which, taken from the apthæ of human beings and inoculated in cattle caused foot-and-mouth disease, and furthermore this identical bacillus was found in the blood of the heart. Furthermore, in animals suffering from the disease, this bacillus inoculated in healthy animals caused the disease. Hence the authors believe the human and bovine disease to be identical.—(*Berl. Thierärzt. Woch.*) (My opinion [Bieser's] is as follows: If inoculations with coccidi according to P. and F., if inoculations with Sarcovici's bacillus, if inoculations with the small ovoid bacillus above mentioned to the satisfaction of each of its discoverers can cause the disease experimentally, only one conclusion can be drawn, viz., each of these organisms can infect the animal, each may be able to convey the poison of the disease, making it a polymicrobic not a monomicrobic disease.)

URTICARIA IN SWINE.—In R.'s locality urticaria occurs very frequently with occasional fatalities. The sickened swine die of symptoms of marked constipation, the illness lasting 5 to 10 days, when death often ensues. The localities thus visited are hilly, dry, and with very little water in summer. According to R. the urticaria begins in the form of erythematous patches the size of a quarter, circumscribed and elevated above the surface; then finally ecchymotic spots show themselves varying in color according to the length of time they remain present. In favorable cases resolution occurs, the patches become pale, and epithelial desquamation with scaling sets in, with separation also of brownish or blackish crusts.—(*Berl. Thierärzt Woch.*)

HYDROMETRA IN A NON-PREGNANT COW.—I found in a cow marked dyspnœa, an exceedingly large abdomen, hard to the touch, loss of appetite; the cow would not get up on her feet. By closing both nostrils with the hands and thus increasing the dyspnœa already present, the cow in her efforts to get air jumped to her feet, but could only be kept upright and on her feet by the combined efforts of several men. Examination showed 15 cm. inwards from the orifice of the vagina a stricture at the site of which the overlying mucous membranes were adherent. There was no difficulty in urination, as this adhesion did not occlude the meatus urinarius. Accouchment being expected in four weeks J. concluded to open up the stenosis vaginæ in order to get at the uterine orifice. In trying to open up the stenosis J. found that the uterine orifice was enmeshed or included in the stenosis, upon entering which orifice (uterine) 60–80 litres of turbid fluid escaped without any trace of a fœtus being present. —(*Berl. Thierärzt. Woch.*)

ENGLISH REVIEW.

DOCKING OF HORSES.—This question is seriously agitated in the English press. It originated after a prosecution started by the Royal Society for the Prevention of Cruelty to Animals against a member of the Royal College of Veterinary Surgeons. The trial brought before the court a number of veterinary celebrites of England, among them Prof. Pritchard, for the prosecution, and Prof. Williams, Prof. Axe, Mr. Dollar, and many others for the defence. The court dismissed the case. Since the *Veterinary Record* in several issues has published communications relating to the subject, and the veterinarian of the prosecution is receiving many remarks of unfavorable criticism. From the reading of these communications it is pretty evident that docking is not an operation that veterinarians will have to take off from their surgery. What is very peculiar, however, in the history of the case is the reference which is made to American horses, which, it was claimed were not docked. It is true that in some parts of the United States, docking is not permitted, that the veterinarian is amenable to the law, that, in fact, veterinarians have been condemned in court for it (we believe), but with all that, it was a poor statement to make, for the operation is extensively performed in some states, in large cities, where societies for the prevention of cruelty to animals exist, and many others can be seen every day with tails which had been recently docked. The question in England has not been solved, and may remain unsolved for some time, as long as the Royal Society has not obtained the same power as the American.

ACUTE BRONCHORRHŒA.—Under this heading Mr. James Webbs, in the *Veterinary Record*, reports a rather peculiar case of a gelding which was found "breathing with great difficulty and having a large quantity of frothy fluid pouring from both nostrils and the mouth." The symptoms had lasted for a few hours, and the animal was presenting a very pitiable aspect. On account of the threatening dyspnœa, the trachea was immediately slit with a pocket knife, and the edges of the wound kept apart by strings tied round the neck. This served the purpose of a tracheotomy tube and gave much relief. Afterwards the head of the animal was bent down and from the opening an astonishing quantity of fluid escaped. A sedative of morphine and atropine was injected subcutaneously, and liniment rubbed down the neck and sides of the chest. The next morning the animal was convalescent.

VERMINOUS ANEURISM OF THE POSTERIOR MESENTERIC AND EXTERNAL ILIAC, WITH RUPTURE OF THE LATTER.—Almost every veterinarian has met with cases of parasitic aneurisms similar to those referred to by Mr. Hoare in the *Veterinary Record*, but the complication of rupture of the external iliac is somewhat unique. A three-year-old filly had been ill for some time and one morning found unable to rise. She had total loss of power of the hind extremities, which were cold; there was a large swelling of the vulva, upper regions of the right thigh and perineal region, with exudation of a thin blood-stained fluid. The pulse was weak and irregular, the respiration accelerated, visible membranes pale, body covered with cold perspiration. The animal died in the evening. At the post-mortem an extensive verminous aneurism of the posterior mesenteric artery by the accumulation of *strongyli armata*, was found. The right external iliac was ruptured and a large quantity of clotted blood was present in the surrounding tissues, in which the parasites were plainly visible.

CANINE AND FELINE SURGERY.—The surgical field of veterinarians is said by many not to be as varied as that of man, and yet when it is considered that all kinds of animals, domestic and others, may find themselves surgical patients of a veterinarian, and that they may present peculiar and specific forms of surgical affections in all kinds of tissues and of organs, it seems that the difference between both surgeries depends only on the specific result to the patient and not on the nature or difficulty of an operation. For these reasons any cases of surgical interference deserve notice and have their value. Two cases of surgery in two small animals seem on this account of special interest. They are reported by Mr. W. Scott, in the *Veterinary Record*. 1. *Removal of a Number of Intravaginal Tumors from a Bitch.*—The history is not complete, except that she comes from a family which has been tainted with the same affection. She presented subcutaneously between the superior commissure of the vulva and the rectum a small tumor, the size of a marble; another in the tissue of the right vulval lip. There was a third one on the floor of the vagina, which was undergoing a necrotic process. Under the influence of chloroform the three growths were removed. That of the floor of the vagina had returned three weeks after and required a second removal. This was not successful; the tumor grew again. It was then dissected out and a greater amount of surrounding tissues removed also. This time there was no recurrence. Microscopical examination proved the tumor to be a fibro-lipoma. 2. *Removal of a Vaginal Polypus in a Cat.*—Old pussy had shown symptoms of labor. Nothing coming to light, she was examined and a circumscribed swelling was felt in the vagina, obstructing the way. Back of this tumor the meatus urinarius was felt. It was evidently a vaginal polypus. It was removed with comparative ease and the patient delivered of a dead and decomposing kitten. The next morning the cat showed symptoms of toxic intoxication and died two days later. The tumor was a simple fibroma. The infection of the surgical wound and of the patient was certainly due to the deleterious condition of the wound.

ENGLISH ENTRIES IN OUR HORSE SHOWS.—It is more than likely that some English exhibitors will make entries in some of the classes at the next exhibition of the National Horse Show Association, to be held in New York city, November 15 to 20. James T. Hyde, the secretary, has received a letter from Mr. Arthur May, of Leigh Woods, Bristol, England, asking for information in regard to several classes. Mr. May intends, if all is well, to exhibit about a dozen horses in the harness, tandem and four-in-hand classes. Foreign entries will lend a new and added interest to the show.

COLLEGE ANNOUNCEMENTS.

M'GILL UNIVERSITY (FACULTY OF COMPARATIVE MEDICINE AND VETERINARY SCIENCE).

The catalogue of this old and honorable institution is received, announcing the thirty-second session, which opens on September 22, by an introductory lecture, the regular course beginning on the following day. The very complete course of instruction formerly maintained is continued, and the faculty remains the same. The only alterations noted by us in the catalogue are the raising of the tuition fee from $60 to $75, and a very practical addition to the prize list, presented by the Massachusetts Alumni Association of McGill, for examination of horses for soundness. For the new catalogue address the Registrar, Charles McEachran, D. V. S.; 6 Union Avenue, Montreal, Can.

THE KANSAS CITY VETERINARY COLLEGE.

The seventh annual announcement of this college comes to us in the form of a very neat little pamphlet, which gives full information in regard to the very comprehensive course by a faculty which probably includes more veterinarians than any other school in the country, there being seventeen in the various branches. Besides every department usually maintained in veterinary colleges, a post-graduate course is maintained to prepare veterinarians for the rapidly-developing demands of sanitary medicine, which is commanding the services of well-equipped men for market, dairy and milk inspection in the different cities. Therefore, this college, whose faculty is largely made up of men engaged in the service of the Bureau of Animal Industry, is specially well fitted to conduct a specialty like meat and milk inspection, with all the collateral branches necessary to impart a thorough knowledge of the various animal food products. The fees for the special course is $40. For the catalogue address Dean S. Stewart, 1404–1406 Holmes Street, Kansas City, Mo.

NEW YORK COLLEGE OF VETERINARY SURGEONS.

The announcement for 1897–98 is before us, and this year is replete with information concerning the college course, with illustrations of a hospital ward for horses and one for dogs, and the chemical laboratory. It also contains full details of the new State law governing the practice of veterinary medicine in New

York, the requirements for the degree, preliminary education, matriculation, etc., together with an official letter in reference to salaried positions under the Bureau of Animal Industry, and notes of other desirable posts awaiting qualified men. No important changes are noted in the faculty, nor in the general course of instruction. For catalogue, address the Dean, H. D. Gill, V. S., 154 East 57th Street, New York City.

CORRESPONDENCE.

THE ANÆSTHETIC USES OF CHLOROFORM AND COCAINE.

KANKAKEE, ILL., Aug. 16, 1897.

Editors American Veterinary Review:

In an excellent and carefully prepared paper on "Anæsthesia," by Dr. F. Torrance, which appeared in the August numbea of the REVIEW, he states that chloroform can be safely administered to the lower animals as an anæsthetic without the aid of an inhaler. I can fully bear out the correctness of this assertion, because for many years I have used chloroform as an anæsthetic without any ill effects by simply pouring it on a sponge or folded napkin, held to the nostrils and lightly covered with a towel or rug. By this method I have seen profound anæsthesia produced in a few minutes on a powerful draft stallion, weighing nearly a ton. I further agree with Dr. Torrance, in preferring chloroform to ether as an anæsthetic for the larger animals, because it is often utterly impossible to produce anæsthesia in horses or cattle with ether. I have seen a pint of C. P. ether administered by inhalation to a three-year-old colt without producing the slightest anæsthetic effect. In regard to administering chloroform to horses by inhalation standing, my experience has taught me that the quickest and safest way is to cast and securely tie the animal before administering the drug. I have seen horses become fairly frantic and break away from all restraint, endangering their own lives and the lives of their attendants, when attempts were made to chloroform them standing.

As to measuring the amount of chloroform to be administered to horses for anæsthetic purposes, I think this is very essential; for by doing so we are not so apt to get serious chloroform narcosis, a condition which can be easily produced in the horse. It is rarely necessary to use over two ounces of the drug in ordinary surgical operations, and sometimes even less than this is sufficient. Chloroform for inhalation purposes should, if possible, be highly prepared, because this drug on standing in bottles exposed to the sunlight is decomposed very rapidly; even in ordinary daylight the drug will slowly deteriorate. The drug kept in containers which are but partly filled and which contain atmospheric air, also decomposes. The principal products of this decomposition are hydrochloric acid and formic acid, together with certain gases. In this condition, the drug is not only irrespirable, but positively acts as a direct irritant to the respiratory tract. Practitioners should, therefore, be careful in selecting this drug for inhalation purposes.

In producing local anæsthesia with cocaine, it has been recently found that solution of this drug made up with warm water at a temperature of 120° F. produces instant anæsthesia when injected into the tissues at this temperature. The experiments of Tito Costo showed that in a case of double inguinal hernia in a man, in which a warm solution of cocaine was used hypodermically on the left side previous to operation, anæsthesia was immediate, not the slightest pain being felt during the operation. On the right side, a cold solution was used, with the result that severe pain was felt, although nearly twice as much cocaine was used as in the warm solution. In a case of poll-evil, operated on by me not long ago, the warm solution of cocaine was used previous to operation with the most remarkable anæsthetic effect,—the animal not evincing the slightest pain, although the abscess was one of the worst that has come under my care for a long time. A further advantage in using the warm solution is that sepsis is not so apt to occur as with the cold solution.

W. J. MARTIN.

PRACTICING IN NEW YORK STATE WHILE LIVING IN ANOTHER STATE.—ANSWER TO A CORRESPONDENT.

ALBANY, N. Y., August 6, 1897.

Editors American Veterinary Review:

DEAR SIRS:—Yours of the 1st inst., with postal from a reader of your journal, received. In answer to the question, "if a veterinary surgeon, a graduate of a New York City college, and living out of the State, is prohibited by law from practicing in New York City or State," would say, that there is no provision in the law which exempts a person from registering on account of being a graduate of a "New York City college."

Section 171 reads as follows, viz.: "No person shall practice veterinary medicine after July 1st, 1895, unless previously registered and legally authorized, unless licensed by the regents and registered as required by this article; nor shall any person practice veterinary medicine who has ever been convicted of a felony by any court, or whose authority to practice is suspended or revoked by the regents on recommendation of a State board."

"Section 183. *Construction of this Article.*—This article shall not be construed to affect commissioned veterinary medical officers serving in the United States army, or in the United States Bureau of Animal Industry while so commissioned; noı any person for giving gratuitous services in case of emergency; or any lawfully qualified veterinarian in other States or countries meeting legally registered veterinarians in this State in consultation; or any veterinarian residing on a border of a neighboring State and duly authorized under the laws thereof to practice veterinary medicine therein, whose practice extends into this State, *and who does not open an office* or appoint a place to meet patients or receive calls within this State," etc.

The only reference in the law regarding a "New York college" is in Section 179, which reads, "and applicants who matriculate in a New York State veterinary medical school before July 1st, 1896, and who receive the veterinary degree from a registered veterinary medical school before July, 1st, 1897, may without further examination, on payment of ten dollars to the regents, and on submitting such evidences as they may require, receive from them an indorsement of their license or diploma," etc., etc.

Therefore, he may practice if he does not open an office in this State; but if he does, it will be necessary to register just as any other graduate.

Trusting that this explanation will be satisfactory, I remain,

Yours fraternally,

WM. HENRY KELLY.

Secretary New York State Board of Veterinary Medical Examiners.

"COULDENT FOOL THE FARMERS.*"

these Words Can be Found In the American Veterinary Review, April No Page 71, In a long acount of the meeting of the Famers Institute at Hillsboro ohio Feb 8 the Hillsboro Gazette makes the Following comments on a Paper Read by me on Milk Fever the Writer goes on too say that it Satisfide me even if it did not the audience yes I am all Ways Satisfied too let the Peopel Know the truth that Is the Reason I am answerfng thear article, that article that they sayed Was copied from Flemings Veterinary obstetrics Could be found on page 656 nothing but the earliest History Can be found thear the rest of the article Can not be found in that Book or in eny other Book that I have, they say that I sent the same too the American Veterinary Review too be Published I never sent it thear too be Published they Wanted to have the Peopel Know that they Wher Inteligent and Fair minded but they did not have judgment good enough too Know What the farmers Wanted but they exposed thear Ignorance by Writing thhat Article but that Is nothing New for them to Write Fals Statements for they Wher Natural Born Impostors this is the advise of the Farmers too me not too put my Remedy for Milk Fever in too eny Veterinary hands like the one that helped too get up the article in the Hillsboro Gazette for he lackes Judgement but put it in too the honest men hands so that Farmers Will Get the benefit of It

---

* In order that there may be no alleged misrepresentations upon our part of Dr. Gilbert's meanings, we print his letter just as received—*verbatim, et literatim, et punctuatim.*—EDITOR.]

Leesburg Ohio W. H GILBERT, V. S.

SOCIETY MEETINGS.

VIRGINIA STATE VETERINARY MEDICAL ASSOCIATION.

The fourth annual meeting of this association was called to order by the President, Dr. George C. Faville, in the office of Dr. W. H. Harbaugh, at Richmond, on Wednesday, June 23, 1897.

After the roll-call the President addressed the association as follows:

GENTLEMEN OF THE ASSOCIATION:—Another year has rolled around and it becomes your duty to elect those officers who shall have the welfare of your organization in their keeping for one more year. The activity displayed during the first two years of our existence as an organization makes the last year seem like a vacation by comparison. Considerable has been accomplished by many of our members working in individual lines. Much remains yet undone. The professional standing of our association and the standing of each member individually depends upon our professional activity largely, and largely upon our desires. That the educated veterinarian should stand upon the same footing socially, professionally and every other way is axiomatic. That in many places he does is a fact, but in Virginia he too many times is placed by those employing him upon the same footing as the blacksmith, the old time horse doctor and the charlatan, which is a great misfortune. This is largely due to the veterinarian himself. Too often he is willing to be put upon the lower plane in order to secure the case. Too often he submits to an unworthy competition in order not to make enemies, and too often he is willing to think that when he has his diploma he has all that can be gotten of veterinary knowledge, and is ready to settle down into the jog-trot of professional practice with no adequate effort being make to keep up with the procession. To keep in the vanguard requires continued effort. How continued only those who try hard to keep there can tell. Much good work has been done during the last year. The work done by our worthy member, Dr. Harbaugh, in face of the fact of much sickness, in his researches into the milk supply of our capitol city, is an example to the rest of us. His work must result in much good, and commands the attention of the whole medical fraternity. The lack of knowledge, worse than all the lack of the desire for information regarding the milk supply of our cities, is a surprise to all those who look into the question. Political boards of health and city councils, whose only care is to cater to the wishes of the ward boss and who will not look into the merits of the question of proper food supplies, are a menace to the healthfulness of our cities. There is not a city in our State that does not control the running at large of dogs because of danger to the health of the public from a largely imaginary trouble (rabies), or which does not compel a careful sanitary inspection of all houses within its limits in order to prevent the propagation of disease, or which does not give its board of health control of many conditions which are deleterious to health. But this one most important of all (the milk supply) is not considered, although the most dangerous of all from many considerations. Our association has accomplished much, but much remains to be done.

The report of the Board of Censors recommended the election to membership in the association of Dr. H. S. Willis, Rapidan Station, Va., which report was accepted, and Dr. Willis was accordingly elected to membership.

The resignations of Drs. Marshall and Dixon, which were tendered on account of their removal from the State, were accepted.

On motion of Dr. Harbaugh, which was seconded and passed, the semi-annual meetings of the association were discontinued for the present.

Dr. Harbaugh was also author of the motion that the President appoint two essayists to read papers at the next regular meeting.

After receiving the reports of the committees and transacting other routine business, the election of officers took place, which resulted in the re-election of the following officers : President, Dr. George C. Faville, Norfolk ; First Vice-President, Dr. W. T. Gilchrist, Norfolk ; Second Vice-President, Dr. Chas. McCulloch, Howardsville ; Secretary, Dr. Thos. M. Sweeny, Richmond ; Treasurer, Dr. A. J. Burkholder, Staunton.

The President appointed as members of the Board of Censors, Drs. Harbaugh, Roop, Willis, Drake and Niles. Committee on Statistics, Drs. Harbaugh (Chairman), Gilchrist and Roop. Committee on Jurisprudence and Legislation, Drs. Harbaugh (Chairman), Niles and Sweeny.

Dr. Harbaugh, Chairman of the Committee on Statistics, read the following report :

GENTLEMEN :—You will observe that as chairman of this committee, I have the same complaint to make as my predecessor. I cannot understand why members neglect to send in notes upon such an important matter when the benefits are mutual.

Dr. E. P. Niles, State Veterinarian, sends the following report, which I include without change :

" *Chairman Committee on Statistics :*

" SIR :—Pursuant to your call for notes on contagious, epizootic and enzootic diseases, I beg to submit the following : Since the last report of your committee I have observed encephalitis in various parts of the State. This is a disease which gives rise to many 'mad dog' scares, and I have seen it in horses, mules, cattle and dogs. Last September the disease was prevalent in Northampton County among mules and horses. The symptoms vary somewhat in the different animals, and even in animals of the same species. In the horse and mule, in cases which have come under my observation, the 'rabid' symptoms have been less marked than in cattle and dogs. The temperature has remained nearly normal ; appetite not impaired, at least in the early stage of the disease, the animal showing a desire to partake of food and water, but unable to do so on account of the paralysis of the muscles of the throat. In the case of a mule, to which my attention was called, the paralysis of the throat was, at that time, the only symptom of disease. Cattle usually become very excitable, and frequently vicious, attacking anything which may come in their way, especially dogs. At first the symptoms are mild, and to the ordinary observer not well defined, but upon examination it is noticed that the animal shows a peculiar indifference to its surroundings : there is a characteristic staring appearance of the eyes, and, owing to partial or complete paralysis of the throat, the saliva dribbles from the mouth. As the disease advances the animal becomes more easily excited, and, if not confined, may wander about in an aimless manner, frequently stopping and bellowing for several minutes at a time. If other animals come its way it makes a vicious charge upon them. In advanced stages of the disease the spinal cord may also be involved, causing partial, and sometimes total, paralysis of the extremities, manifested by a staggering gait, or inability to stand. The true cause of this disease seems not to be well understood. I am of the opinion, however, that it is an infectious disease due to a fungus. In one outbreak, which I have investigated, the disease was confined to a certain valley through which a stream of water ran. On this stream of water is located several saw-mills, the sawdust from which is thrown into the stream. I am of the opinion that the decaying sawdust in this stream had something to do in the causation of the disease in this instance.

" Canine distemper has been more prevalent in this section of the State during the past two months than at any time since I have resided here. Some of the cases are of a very mild nature, while others are very severe.

"Enzootic pharyngitis made its appearance in this section during the spring for the first time; several cases having been brought to the clinics held by Dr. Roop at the college veterinary hospital. The most of such cases have yielded very promptly to treatment, complications arising only in one case. In that case it became necessary to trephine the inferior maxillary sinus to remove the pus, which had collected there. Distemper has also been prevalent during the past three months, in a much more severe form than usual.

"A few cases of black-leg have also been reported. This disease has, however, been confined to a very limited area.

"Splenetic or Texas cattle fever prevailed in certain sections of the State during last summer, but since the quarantine rules and regulations have been in force but two outbreaks of the disease occurred above the quarantine line."

(I am pleased to announce that Dr. Niles has succeeded in having a Board of Health established in the town of Blacksburg, consisting of one veterinarian and two physicians. He also induced the town council to pass an ordinance, which is now in force, requiring meat and milk inspection for the town, this being the first and only place in the State having such a law.)

Dr. H. Bannister, of Roanoke, reports as follows:—"During the year past I have had considerable of a sort of meningitis, that appears to be infectious to some extent; it has occurred mostly in cows, calves and some in dogs. The symptoms in the main are identical, excepting that in adult cattle there appears to be more violence than in either dogs or calves. Treatment has, in my practice, been of no avail, death usually occurring in from 36 to 48 hours. I have seen but two recoveries, both in cattle, one a four-year-old Jersey and the other a yearling. The cow was given small doses (ʒ ii) of chloral hydrate and the heifer got no treatment. A very mild form of pharyngitis has been very prevalent this year, requiring very little treatment, and, beyond the annoyance of incessant coughing, giving no trouble. Strangles in light form has occurred as it usually does."

Dr. H. S. Drake, of Leesburg, sends a very important report, and I fail to see how we can overlook some parts of it. There can be no question that the Association should investigate, as he suggests. His report is as follows:—"Tuberculosis is prevalent in every dairy of the county to a greater or lesser degree. Nothing is being done to check its spread, except in some one or two instances where I have examined by physical means, in order to destroy or remove all diseased cattle before new ones are brought in for renewing the dairy. Others have been warned, but no notice is being taken of the law. Many do not know that there is any danger. I do not think that the medical doctors are giving any warning to their patrons, as I know of the supply for babies being furnished from cows that have been diseased for some years, and the M. D.'s of the town are surely aware of the existence of the disease. Osteo-porosis has been observed in a number of horses boarding at Oak Hill farm, that are natives of Pennsylvania (near Philadelphia). They were diseased when brought here about one year ago. Some have died and others destroyed at my instigation, where fractures existed. I now have two geldings, three years old, and two broodmares under observation. Notes as follows: September 17, 1895, two colts, sorrel and black, two years old; enlargement of superior maxillary in both very bad; gait retarded and stiff, otherwise in good condition; emasculation standing; both did well. I was informed by Mr. A. (owner) that the animals were getting much better, as the enlargement is scarcely perceptible to an ordinary observer. I saw them May 26, 1897, and would not have believed there could be such a change in so short a time and without treatment. Their movement is free and with a new vigor of life, as is clearly demonstrated by their ability to kick and jump. The two broodmares, as stated by Mr. F., lost their foals before coming to his farm, and they are perceptibly diseased, but have by their sides two fine foals as ever grew and apparently sound at this writing. I hope to get a full history of the mares and to keep track of their offspring as developed and note results for further reference.

"Fistula of Withers and Poll.—My attention has been called at different periods to this disease existing among so many horses of all classes and types. I wish to bring before the profession the advisability of investigation by the able professional staff at our State Institute. It is causing the loss of many valuable animals in this and adjoining counties. It is more prevalent on the dairy farms of this county and among young unbroken colts. All cases can be traced to there having been some animal affected on the premises before the outbreak, and in many places every animal has been affected at different periods of time; and when all horses have been removed from said farm, and a new tenant with new stock came free of any such disease, in four to six months there would be from one to three animals showing either swelling of withers or poll. I have noted that, as to forms, one may be classed as a fibro-tumor enlargement; the other as a sero-purulent type, which is the most common to my observation, and I believe it to be of a contagious or infectious nature, while the fibrous form I do not consider to be so. The fibrous form has a number of ducts, while the other form has but a single one for connecting directly with the spinous processes or shoulder and its integuments."

In Richmond and vicinity during the past year muscular rheumatism has prevailed to more than the average extent. Pharyngitis among horses, which first made its appearance here several years ago in a mild form, now appears in many instances as a malignant disease, and in fact all cases of it require closer attention than formerly.

About the average number of cases of tetanus have occurred.

The nervous form of distemper in dogs has caused a large death rate.

Encephalitis of cattle seems to have moved to the western part of the State. I was called to attend a few isolated cases during the year, but I heard of no outbreak of any importance such as we had a few years ago.

Respectfully,
W. H. HARBAUGH, *Chairman.*

The afternoon was devoted to the reading and discussion of reports of cases, after which the association adjourned to meet in Norfolk on the fourth Wednesday of June, 1898.

THOS. M. SWEENEY, *Secretary.*

MAINE VETERINARY MEDICAL ASSOCIATION.

The regular meeting of this association was held at the Elmwood Hotel, Waterville, Wednesday, July 14, and on roll-call Drs. Choate, Huntington, Sally, Joly and West were present.

Dr. Huntington was elected President *pro tem.*

On motion it was voted to reconsider the resolve passed at the special meeting held at Augusta, Feb. 15, 1897, in relation to substituting the Maine Board of Agriculture for the present Maine Cattle Commission and it was the sense of the meeting that such a change would be of no benefit.

Dr. Huntington reported that he sent the resolves passed at the February meeting in regard to the inspection of cattle for the Massachusetts market to the Massachusetts Cattle Commission and it had resulted in their sending tags to veterinarians who are testing for their market, and he thought possibly they might later appoint Maine veterinarians to do the testing.

Dr. Joly reported for the committee who were appointed to manage the passage of the bill submitted to the Legislature that he was the only member present at the hearing before the Judiciary Committee, and that, while he considered that they were disposed to be fair and just toward the profession, the association was handicapped by having only one representative present, while the "quacks" had a number there, hence the bill was lost.

Dr. Joly translated some articles in a French veterinary journal relating to Nocard's recent work, which were interesting and instructive.

On motion it was voted that the unpaid dues of Dr. Farnum, who recently met with such a sadly sudden death, be credited as paid to date.

On motion the following resolutions were adopted:

WHEREAS, It has pleased Almighty God to remove from our midst by death one of our best loved and most respected members, Dr. William David Farnum,

Resolved, That we deeply deplore the great misfortune which has befallen the family of the deceased and,

Resolved, That we hereby extend our sincere and heartfelt sympathy to the wife and family in their bereavement.

The Secretary was instructed to send a copy of these resolutions to the wife of Dr. Farnum.

Pursuant to notice given at the last regular meeting, according to Sections 1, 2, 3 of Article XII of the constitution, it was unanimously voted to amend Section 1 of Article III by striking out the word *six* in the second line of said Section 1 of Article III and substituting therefor the word *three*, so that as amended it shall stand "the meetings of this association shall be held once in three months."

After the unanimous expression of opinion favoring them, the following were passed:

Resolved, That as a physical examination as a means of diagnosing tuberculosis is false, misleading and entirely unreliable, and is so conceded by all noted scientists, and be it further

Resolved, That we, members of the Maine Veterinary Medical Association, absolutely refuse to make any physical examinations as the exclusive means of detecting tuberculosis. and believe that such examinations are fruitful causes of the spread of the disease by giving the public a sense of security which does not exist.

Voted that the next meeting be held at Rockland, and that at our January meeting we extend a cordial invitation to the ladies to be present.

After reporting many cases from the practice of the various members and a full, free and edifying discussion of same by all present, the meeting adjourned. W. L. WEST, *Secretary.*

MINNESOTA STATE VETERINARY MEDICAL ASSOCIATION.

The regular semi-annual meeting of this association was held at the Court House, in Owatonna, Minn., on July 13th and 14th.

The meeting was called to order by President Brimhall on the evening of July 13th. The following gentlemen were present: Drs. C. C. Lyford, M. H. Reynolds, N. S. Erb, J. P. Anderson, S. D. Brimhall, L. Hay, S. H. Ward, A. Youngberg, K. J. McKenzie, A. Dallimore, E. N. Chute, J. McGillivray, J. N. Gould, J. W. Gould, J. H. Dietz, W. Amos, and Dr. Shoenlefer, of Chicago.

Secretary's and Treasurer's reports were read and adopted.

Dr. Reynolds then, as chairman of the Committee on Infectious Diseases, presented a lengthy report on dealing with infectious diseases (hog-cholera, tuberculosis and glanders) in the State, suggesting means of eradication. Several members urged the necessity of providing some means of compensating owners of glandered horses ordered killed by the boards of health.

Dr. Brimhall related some of his experiences in dealing with glandered horses, and told pitiful stories of circumstances surrounding poor owners of horses killed.

Dr. Amos thought compensation would be an incentive to owners to have their animals tested and destroyed, rather than trade them off, thus preventing the chief means of spreading the disease.

Dr. Shoenlefer also made some valuable suggestions on dealing with infectious diseases.

Election of new members then took place, and the following were admitted as members: Dr. Amos, Owatonna; Dr. J. N. Gould, Worthington, and G. McGillivray, Spring-Valley.

Meeting adjourned.

The meeting was called to order on 14th, at 8 A. M., by the President, and Dr. Youngberg, of Lake Park, Minn., gave a very interesting paper on "Malignant Catarrh of the Ox." This was followed by a lively discussion, which brought out the fact that the disease is quite as prevalent in the southern part of the State as in the northern, Dr. Amos reporting a number of cases about Owatonna.

Dr. Amos then presented some excellent specimens of tuberculosis, which were carefully discussed.

Dr. Reynolds spoke briefly of legislative effort to control tuberculosis.

Dr. Brimhall, of Minneapolis, gave a short talk on intralaryngeal injections of bitter almond water and morphia in cases of acute and chronic cough.

The meeting then adjourned till 1 P. M., when Dr. Lyford, of Minneapolis, exhibited specimens of horses' feet and gave a demonstration of his way of operating for contracted feet.

The meeting then adjourned to Dr. Amos' office, when Dr.

S. H. Ward, of St. Cloud, read a paper on "Specific Cures for Certain Diseases,"* an amusing *résumé* of remedies recommended to him by horse-owners and would-be veterinarians.

Dr. Reynolds gave a practical demonstration of his way of performing ovariotomy in a bitch, while Dr. Brimhall conducted a clinical diagnosis of an obscure case of lameness.

A vote of thanks was tendered Dr. Amos for courtesies extended and assistance in making the meeting a successful one; and after deciding to hold the next semi-annual meeting at the Experimental Farm, St. Anthony Park, St. Paul, the session adjourned.

L. HAY, V. S., *Secretary.*

COLORADO STATE VETERINARY MEDICAL ASSOCIATION.

The regular semi-annual meeting of this association was called to order by Dr. Sol. Bock, President, in the chair.

The following members answered to roll-call: Drs. Solomon Bock, F. M. Hunt, Emil Pouppirt, of Denver, and Dr. D. P. Frame, of Colorado Springs. Dr. Chas. Lamb, of Denver, came in later. Dr. M. R. Trumbower, of the U. S. V. M. A., was present as a welcome visitor.

Minutes of the last meeting were read and approved.

Dr. Frame made a verbal report on the progress and result of the proposed Veterinary Bill in the last legislature. The bill was reported favorably by the committees of both branches of the Assembly, and was on the calendar for passage, but was not reached in time for action.

The application of M. J. Dunleavy, M.D.C., of Chicago Veterinary College, and of Dr. E. Bovett, were presented by Dr. Bock for membership in the association, and were seconded by Dr. Hunt. They were elected to membership.

A letter from Dr. A. T. Peters, of Lincoln, Neb., was read, requesting the influence of this association in securing the next annual meeting of the U. S. V. M. A. in the West. The Secretary was directed to reply to this assuring Dr. Peters of our support.

Dr. E. Bovett came in and was introduced to the members present.

Dr. Pouppirt nominated Dr. Lamb for Treasurer of the Association. Seconded by Dr. Hunt, and Dr. Lamb was elected Treasurer.

Dr. Charles Gresswell, the regular essayist for this meeting, being absent, the members indulged in a general discussion of rare and interesting cases, with treatment of the same; and in this way spent a very enjoyable and profitable afternoon.

---

*Printed elsewhere in this issue.

The next meeting will be called January 4th, 1898. Adjourned to meet at that time. D. P. FRAME, *Secretary.*

VETERINARY ASSOCIATION OF THE DISTRICT OF COLUMBIA.

The fourteenth meeting of the Veterinary Association of the District of Columbia was held at Elks' Hall, No. 1006 E St., N. W., Washington, D. C., July 31st, at 8 P. M.

In the absence of the President, the Vice-President, Dr. Buckingham, called the meeting to order.

The following members answered the roll-call: Drs. Barton, Buckingham, Turner, Walmer, and C. B. Robinson; Dr. Yetton, an applicant for membership, was also present. A letter was received from Dr. C. F. Hadfield expressing regrets that he would be unable to attend the meeting.

The Committee on Credentials made a favorable report on the applications of Drs. Salmon and Yetton for membership, and on motion of Dr. Robinson they were elected members of this association.

The Legislative Committee reported that no active measures had been taken regarding the bill to regulate the practice of veterinary medicine in the District of Columbia at the extra session of the 55th Congress, for obvious reasons, but that a vigorous effort would be made at the coming session in December.

The subject of rabies and its existence in the District was discussed in its many phases, and the association resolved itself into a Committee of the Whole and drafted the following resolutions, which were ordered to be forwarded to the Commissioners of the District of Columbia:

WHEREAS, This association recognizes rabies as a disease, and that it exists at present in the District of Columbia among the lower animals and man, and that we as a body have recognized this enzootic disease in a large number of animals, particularly dogs, and

WHEREAS, We believe this disease is increasing in this District, and, while we recognize that there is no cure for it, after the disease is developed, we firmly believe that the disease can be prevented by proper sanitary measures; therefore, be it

RESOLVED: That this association recommends to the honorable Commissioners of the District of Columbia that all dogs, running at large, during the months of June, July, and August, be required to wear a proper muzzle, and that all unmuzzled dogs be considered dangerous to the health and welfare of the public, and that they be treated as unlicensed dogs and impounded, and that a copy of these resolutions be forwarded to the honorable Commissioners of the District of Columbia.

Dr. Robinson reported a very interesting case of rabies affecting a mule. The points of interest in the case were the vicious attacks by the teeth made on anything which it encountered, and the fact that the animal moved in a straight line from one side of the corral to the other.

Dr. Buckingham cited several cases of rabies which had existed among the wolves at the Zoological Garden.

Dr. Barton reported several cases of dumb rabies.

For the next meeting (Sept. 25th) it was agreed that the subject of tuberculosis should be discussed in its various forms, each member discussing it in one of its peculiar relations to the public health.

The meeting was then adjourned.

J. P. TURNER, *Secretary.*

PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.

This association will meet in Franklin, September 21st, and there is every promise of a very large and enthusiastic gathering of Keystone veterinarians. It is the home of the Third Vice-President, Dr. Geo. B. Jobson, and as chairman of the local committee of arrangements, he has already procured a large hall—well lighted and with good ventilation—two very essential points. The hotel rates have also been made so that all may be satisfied. Dr. Jobson being Mayor of Franklin, will not leave any visiting veterinarian come away regretting his acquaintance with the city of Franklin and vicinity.

The Local Committee of Arrangements is composed as follows: Chairman, George B. Jobson, Franklin; J. B. Irons, Erie, and J. A. Waugh, Pittsburg.

The Reception Committee consists of Dr. G. B. Jobson, of Franklin; George Jobson, Jr., of Oil City, and C. C. McLean, of Meadville. The reports received from the different members of committees are very encouraging, and the outlook is good.

The following papers have been promised, and more are expected:

Dr. Geo. B. Jobson, Jr., "Bacteria."

Dr. J. B. Irons, "Anthrax."

Dr. Willis B. McCray, "Parturient Apoplexy."

Dr. W. Horace Hoskins (subject not stated).

Dr. C. C. McLean, "Dairy and Milk Inspection."

Dr. Leonard Pearson (subject not stated).

Dr. Otto G. Noack, "Report of surgical cases, as tenotomy and resection of neurotic parts of soft tissue of frog caused by nail wounds, etc."

Dr. F. S. Allen, "Report of Interesting Foot Troubles."

We extend to all veterinarians a hearty invitation to be with us at Franklin, Venango County, on September 21st.

DR. W. L. RHOADS, *Cor. Secretary*, *P. S. V. M. A.*

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

The annual meeting of this association will be called to order at 10 A. M., September 14th, at the Vanderbilt Hotel, Syracuse, and will be in session for two days. It is very earnestly desired and expected that there will be a very large attendance of members from all parts of the State.

While the programme is not thoroughly completed, enough is announced to guarantee that those who attend will be repaid a hundredfold for their journey, and the diversion from the humdrum of perpetual practice will be a deserved recreation before the arduous duties of the fall and winter set in.

Many cannot spare the time to go such a distance as Nashville, but all can run away for two days to profit by the great advantages the State Society offers.

We append a list of papers which the Secretary has kindly forwarded, and others are promised. If no more were to be presented there is plenty here for interesting discussion and thought.

Prof. James Law, "How to Prepare Contagious Products for Shipment to the Pathological Laboratory."

Dr. George H. Berns, "Osteo-Porosis."

Dr. W. L. Baker, "The Use of Cold in the Treatment of Laminitis and Parturient Apoplexy."

Dr. Claude D. Morris, "The Veterinarian in the Jury Box."

Dr. Roscoe R. Bell, "Infectious Catarrhal Fever of Horses."

Dr. Charles Cowie, subject not given.

Dr. William Henry Kelly, subject not given.

CALIFORNIA PURE FOOD LAW AND ORDINANCES.—Through the courtesy of Dr. H. A. Spencer, Veterinary Inspector and Health Officer of Santa Clara County, California, we have before us a copy of a pamphlet bearing the above title, which gives the full laws concerning contagious diseases in animals and regulating the private inspection of the same; creating the office of Veterinary Inspector and Health Officer and prescribing his duties. A hasty inspection of the ordinances shows them to be more exacting than in the East.

NEWS AND ITEMS.

A SPECIAL BULLETIN on "Tuberculosis in Cattle and How to Use Tuberculin" has just been issued by the Ontario Department of Agriculture at Toronto.

STOMACH WORMS OF SHEEP.—Prof. W. B. Niles, of the Iowa Agricultural College, has issued a bulletin on the *Strongylus Contortus*, giving the life history, symptoms, methods of prevention, and cure of the affected animals.

LARKSPUR POISONING.—State Veterinarian M. E. Knowles, of Montana, has issued a circular to the stock raisers of his State, dealing with the symptoms and treatment of poisoning by this plant, which chiefly affects sheep and cattle.

AT the recent examination by the Maryland Veterinary Medical Examining Board, three applicants presented themselves, two passing (Drs. J. S. Buckley and B. A. Brown), and one failing.

D. P. FRAME, M. D. C., holds the office of Food Inspector for the city of Colorado Springs, Col., which is an appointive office under the City Council, and comprises the meat, milk and dairy inspection, as well as other food products. He is also Secretary of the State Veterinary Medical Association.

DOCKED HORSES IN ENGLAND.—In a case of prosecution by the Royal Society for the Prevention of Cruelty to Animals, of England, the counsel for the defense made the estimate that three-fourths of the horses in England were docked. Professor Axe, on cross-examination, raised the estimate to 90 per cent.

AN IMPOSTOR.—We are informed by a correspondent that one C. H. Stull is advertising at Marshalltown, Iowa, that he has had thirty-eight years experience as a veterinary surgeon, and that he is a graduate of the American Veterinary College. No such person ever graduated from the A. V. C., as shown by the catalogue, and his assumption is a fraud.

WE regret to record the death of the wife of Dr. Jno. M. Parker, Secretary of the Massachusetts Cattle Commission, which occurred at his residence in Haverhill the first week in August. It was but a short time ago that the REVIEW published his happy marriage, and we extend him our respectful sympathy in his great bereavement.

STEAM FOR SKIN DISEASES.—It has been demonstrated that the application of a jet of "cooled" steam to parts affected with chronic eczema, and other eruptive skin diseases, for a period of 15 to 30 minutes per day, will bring about a healthy condition of the skin. This would be well worth trying in cases of greasy heels.—(*Vet. Journal.*)

PENNSYLVANIA TO INVESTIGATE CONTAGIOUS ANIMAL DISEASES.—The Legislature of Pennsylvania has just appropriated $15,000 to be employed in investigating contagious and infectious animal diseases. Following the formation of the Live Stock Sanitary Board, with the intelligent activity of State Veterinarian Pearson, this should result in the greatest benefit to the cause of sanitary medicine.

WORDS THAT MAKETH THE EDITORIAL HEART GLAD.—An esteemed Wisconsin correspondent writes as follows, under date of August 12: "I wish to congratulate you on the journal you are issuing to the veterinarians to-day. It almost seems that every month's issue is an improvement on the month before, if that were possible, and hardly see how any veterinarian can afford to 'keep house' without it."

HOPE FOR THE HORSE.—Those who think the usefulness of the horse is being circumscribed will hail the announcement that a new field is opening up for him, in the production of "equisine," obtained by injecting alcohol into the circulation of the horse, afterwards withdrawing the blood, and treating it with chloral to control coagulation. This substance is then used as an antidote for dipsomania in man, whether congenital or acquired.

PRACTICE IN COLORADO.—A correspondent, practicing in Colorado, writes: "I may say that the state of veterinary practice in this Western country is just now at a very low point, owing to the very low price of horses and the fact that there is very little demand for them in this market. As for myself I am doing very little as compared to what I have done in the past."

REMOUNTS FOR U. S. ARMY.—Purchases of remounts for the American cavalry have been resumed and last week the orders placed through the Chicago market stiffened prices up a bit. The requirements as to soundness and freedom from blemish are so very strict, however, that not many of the general run can qualify. Purchases for the army were also renewed in Kentucky last week. The prices ordinarily paid are close about $100. —(*Breeder's Gazette*, Aug. 4.)

SALE OF VETERINARY DRUGS.—It having come to the notice of the Central Veterinary Medical Society of England that a wholesale drug firm was offering to supply veterinary surgeons' clients at the same price they were charging members of the profession, the Society adopted and transmitted to the druggists a resolution expressing their regret at observing such a price-list in the hands of horse dealers and private owners, showing that it was prejudicial to the interests of the profession.

FOR THE POSITION OF ASSISTANT IN OBSTETRICS, A. V. C.—We are requested to make the following announcement: "By direction of the Board of Trustees, the Board of the Faculty of the American Veterinary College will hold a competitive examination during the last week of September for the position of assistant to the Chair of Obstetrics, the examination to consist in a written composition and the delivery of a didactic lecture of half an hour on subjects related to that department. For information address the Dean, 139 and 141 West Fifty-fourth Street, New York."

VETERINARIANS AND HORSE SHOWS.—The Irish Central Veterinary Association was founded July 22, at Mullingar, Ireland. When the routine organization business was through with, a discussion took place on the appointment of veterinary surgeons to horse shows, and the following resolution was unanimously passed: "That the acceptance by veterinary surgeons of appointments from show committees, under circumstances which render it possible for their opinion to be challenged and disputed by interested outsiders, is to be deprecated in the interests of the veterinary profession, and it is the opinion of this meeting that no veterinary surgeons should accept appointments under such conditions."

SANMETTO IN OVER FIFTY CASES OF AZOTURIA.—Dr. F. J. Bliss, C. V. S., of Earlville, Ill., writing, says: "I have been using sanmetto in my practice for a year, and I consider it almost a specific in azoturia. I have given it a thorough test in over fifty cases of this disease in its different stages and have found the results invariably the same—the patients improving from the commencement of its exhibition, the urine clearing up, the offensive odor disappearing and all alarming symptoms abating, and a general air of comfort to the animal is at once noticed. It is often indicated in other diseases, and I have received much benefit from its use in my practice in general, and at some future time will give my experience with sanmetto in other fields of usefulness.

NEW GRADUATES FROM THE VETERINARY DEPARTMENT OF HARVARD UNIVERSITY.—At the recommencement exercises of this school, which took place on June 30th, in conjunction with the other departments of the University, twenty gentlemen received the degree of M.D.V., on the recommendation of the Dean, Prof. Charles P. Lyman: Frank Jerome Babbitt, Elmer Warren Babson, Clarence Edward Burchstead, Howard Montgomery Burgers, Cornelius Cronon, Frederick Thomas Dolan, Clement Arthur Hamblet, Edward Ambrose Madden, Arthur Winthrop May, William Augustine Nannery, Ellis Peterson, Jr., Charles Herbert Perry, Thomas Joseph Shenkwin, Frank Benjamin Stratton, Berton Amasa Thissell, Pell Fletcher Wallingford, Lewis Cummings Weeks, Daniel George White, William Tisdale White, and Alexander Eames Wight.

TETANUS ANTITOXIN.—At a meeting of the French Academy of Medicine, held in Paris, on the 27th of July last, Dr. Nocard stated that the Pasteur laboratories in Paris had dispensed 7000 doses of ten c.c. each of tetanus antitoxin, which had been used for the preventive treatment of 3100 animals located in districts where tetanus was endemic. Not a single death from tetanus occurred. One horse alone, treated five days after the infection of the wound, had tetanus, but the disease was mild. During the same time the same veterinarians had observed 259 cases of tetanus in animals that had not been treated preventively with the antitoxin. Dr. Nocard states that there is no doubt of the utility of preventive injections of tetanus antitoxin in veterinary practice. The treatment of tetanus, when once thoroughly declared, is difficult and uncertain. Its prevention, therefore, is of prime importance.

CYSTIC CALCULI IN A BITCH.—In the *Journal of Comparative Pathology and Therapeutics* Mr. H. Gray, M.R.C.V.S., suggests that cystic calculi may be more rare in bitches than in dogs, or, at least, he says that such has been his experience. Such may be the case, but there are no doubt many veterinarians who have seen cystic calculi quite often in the bitch and probably of many that, like the present case, had a fatal ending. This fox terrier, aged about ten years, had had great difficulty and pain in making water. For two days her condition was a great deal worse, she had passed a little bloody urine, had occasional vomiting and was very drowsy. On examination at about one and a half inches from the vulva, a calculus as big as a large marble, was detected in the urethra. By careful manipulation seven little stones were squeezed out. To remove the large one, the bitch was chloroformed, the vagina dilated with an ear speculum, a vertical incision made of the stone permitted its extraction. No more calculi could be detected. But at the post-mortem, made the next day, two more were found in the urethra, one of the same size as the one operated on and a smaller one. The mucous membrane of the bladder was much inflamed.

The Horseless Carriage.—Few men are so well posted as to events on both continents, especially those that relate to the horse, as Mr. W. E. D. Stokes, who is the Russian Government's commissioner in America for horses. He has traveled widely and is possessed of keen powers of observation as well as an ability to set forth clearly the conditions that fall under his view. In a recent letter to the editor of an Eastern contemporary, Mr. Stokes, who is home at present, thus throws a ray of light on the motocyle question that is troubling some of those who formerly gave attention to horse-breeding: "I have just got a long account from the other side regarding motor carriages. We had an idea here that it was thought on the other side that they might supersede the horse, but there are not half as many used to-day as there were two years ago." Of course the horse has been wiped out of existence numberless times—on paper. Nothing so well suits the average contributor to "modern journalism" as to weave a story of fiction from a single strand of fact. Oftentimes they do not have even the "raw material" with which to work, but concoct startling stories of alleged fact from the nebulous dreams of would-be inventors. Much of the stuff written about "the horseless age" has found its way into print from such sources. Even if the cab horse should follow the street-car horse it would be all the better for horse-breeding, but at present there seems small chance that "cabbie" will need to take out license as an engineer before soliciting fares.—(*Breeder's Gazette.*)

ASSISTANTSHIP WANTED.

By a young man (26) graduate of A. V. C. 1896. Want a place where can see plenty of Practical Work. For further information, address,

J. S. Buckley, Mt. Washington, Maryland.

PARTNER WANTED.

A good man to take interest in large Hospital and Practice, established ten years in one of the best towns of 7000, in State of Illinois. No opposition. Must qualify to take entire practice, in one year. Only $1200 cash required. Address, A.B.C., care of American Veterinary Review, 141 West 54th Street, New York.

AMERICAN VETERINARY REVIEW.

OCTOBER, 1897.

EDITORIAL.

SEROTHERAPY OF TETANUS.

The question of the value of serotherapy in tetanus seems to be somewhat obscure, and the ordinary practitioner is at a loss what to do in reference to that disease. Shall he treat his patient with antitoxin, or shall he not? Will he be justified in having his client incur the heavy expense connected with the purchase? Will the results of the treatment by antitoxin increase the chances of recovery, and many other points remain open for discussion. If we are to believe the numerous reports of recoveries that are found in veterinary journals, it seems that antitoxin has given to those who used it excellent results; and, again, when we listen to the authoritative statements of others, antitoxin will not cure a case of lockjaw, no matter how slight; it may reduce the severity of the tetanic manifestations and shorten the disease, but that is all.

It is evident that between the two statements, it is difficult to select!

In tracing the subject on the Continent, it is pretty evident that there exists between German and French savants a great difference of opinion—the former insisting that tetanus is *curable*, and the latter that it is only *prevented*, by the use of antitoxin.

The REVIEW has on several occasions called the attention of its readers to the subject, and many of our friends have written upon it in our pages. It is for this reason that we have secured and print elsewhere the record of a series of experiments carried on by Prof. Nocard, with antitoxin of French and German origin, experiments which we have followed attentively and with great interest, and which have established beyond doubt the following facts:

(1) Antitoxin, whether of *French* or *German* origin, remains powerless when injected at the *very* appearance of the first symptom of the disease.

(2) It is powerless also when injected twenty-four hours previous to the appearance of the first symptoms.

(3) If made forty-eight hours previous to the appearance of the first manifestations it may (?) prevent them and save the patient, provided it is injected into *the veins* and in *very large doses.*

(4) If made even in small doses a short time after the injection (*a fortiori* before), it will surely prevent the appearance of all tetanic manifestations.

The conclusions that are thus presented by the celebrated French veterinarian are of great weight, and they evidently will serve to remove from the serotherapy of tetanus the false interpretations which published records of recovery have given to it.

The curative treatment of tetanus is yet to be found.

THE NASHVILLE MEETING OF THE U. S. V. M. A.

In our news department this month will be found a very concise account of the thirty-fourth annual meeting of the National Association, and its perusal cannot fail to leave with the reader the impression that this convention has, upon the whole, surpassed in value, interest, and attendance all previous meetings, and, as the field was new, the wisdom of the Executive Committee in undertaking the experiment of meeting in a Southern state has been fully proven. Very many of the questions which were brought before the meeting, both scientifically and as matters of policy, are of vital importance, both to the profession at large and the welfare of the association. While space will prevent their consideration at this time, the REVIEW will give them very earnest attention during the fall and winter months, and it invites members to use its pages as freely as they may wish for a similar purpose. There can be no healthier sign of the position which this association holds in the hearts of the great army of veterinarians than the interest taken in the intellectual programme, as night sessions were in order and recesses were unknown. More business was disposed of than ever before, not a member being present with a paper to be read who did not have the opportunity.

THE NEW YORK STATE MEETING.

Certainly no veterinary medical association in America—save the National—has any better opportunity to become a great power for the good of the profession than has the Empire State Society. We print in our news columns a list of the members who attended the very successful meeting held last month in the city of Syracuse, and the addresses given show that they came from a great many sections of that great Commonwealth, which seems destined to become—as the mother of veterinary medicine in this country—the leader in all that is best for the welfare and advancement of veterinarians. The deliberations of this meeting were of a higher order than in any of its former ones, and in matters legislative the members appeared to realize that their expressions would carry dignity and weight, and hence they were guardedly approached, discussed and acted upon. The recommendations of the Legislative Committee's report did not appear to all those present to be the best that the association could evolve, for the good of the greatest number, and, hence, the most important proposition was laid upon the table for one year, when ideas may more thoroughly mature and it may be discussed more intelligently in the light of transpiring events. The creation of a State Veterinary Department, under whatever name the framers of the law may choose to call it, is an event of the profoundest importance to the whole profession of the State, and should be secured only when the representatives of that body are thoroughly united on the character of that service, and until they are all propositions should lie on the table.

We can only suffer in the end where the statute is the production of a class, or the creature of politics. To be lasting, to be an honor to the profession and a blessing to the people, it must be founded upon just principles, with the corner-stone of fairness and freedom from the "spoils" system. The profession is entirely too great to place this important department in the hands of any one who will use it to further any private ends, or use it against any section of the whole body.

The papers read were of unusual interest and the discussions upon them animated, intelligent, and entertaining. The members may well feel proud of their eighth annual meeting, and in deciding to hold their next convention in this city they may be sure that a hearty welcome awaits them by the profession of Greater New York.

In electing Dr. W. L. Baker, of Cortland, to the position of President they have honored a man who has worked assiduously from the inception of the society to bring it to its present estate, and they may be assured that he will take with him into his new office a pride which will redound to their benefit. Dr. Bell, of the REVIEW, became the Vice-President, and the old and tried Secretary, Dr. Claude D. Morris, of Pawling, could not be spared from his onerous duties, and, amid his protests, accepted the office for another term. The Censors elected were Drs. Huff, Kelly, Gill, Law, and Poucher.

THE REVIEW'S ADVICE FOLLOWED.

In an editorial in the July issue of the REVIEW we commented upon the official inquiries by foreign governments for cavalry horses, and the subsequent suggestion by some leading agricultural journals to the Secretary of Agriculture, to appoint a special commissioner to investigate the proper line of breeding of such horses for the information of our American horse-breeders. The REVIEW advised the Department of Agriculture to select a veterinarian as such commissioner, and we are pleased to report that our advice has been followed. Secretary James Wilson has appointed Dr. William A. Bruette, of Chicago, as a commissioner to investigate the demands of the foreign buyers in Chicago, to note carefully the kind of horses purchased, to learn the intended uses of these horses in foreign countries, and to inquire into their breeding. The results of this investigation will be published in a special report.

We are glad the stone has been set rolling and are confident that the usefulness of a veterinary commissioner in such questions will be established once and for all. Dr. Bruette is a bright young veterinarian, an inspector for the Bureau of Animal Industry and the veterinary editor of the *Horseman*. We wish him success in his investigation and shall await his report with interest.

A LIBRARY FOR THE NEW YORK STATE VETERINARY COLLEGE.—We learn through the public press that when ex-Governor Roswell P. Flower was driving through the grounds of Cornell University his horse balked in front of the library of the veterinary department and refused to proceed or be comforted. The distinguished occupant of the vehicle alighted to seek the cause of his erratic behavior. Failing in the search, he entered the building in front of which his progression had been so ruthlessly cut short, and meeting there the Director of the Veterinary College, who was contemplating the fifteen volumes contained in the library, appealed to him, as an expert in equine psychology, for an explanation of the singular circumstance. With that acute eye for business which is characteristic of his nationality, the Director suggested that his steed had become appalled at the empty shelves and had refused to further serve his wealthy and generous master unless he contributed something very handsome to the nucleus of the veterinary library, and, in reply to the ex-Governor's interrogation, remarked that $5000 would about fill the bill. Without further ado, the guest drew from his inside pocket his familiar check-book, filled it out in accordance with the suggestion, and thus has laid the foundation of the greatest library for veterinarians in the world.

ORIGINAL ARTICLES.

[Written Specially for the American Veterinary Review.]

EXTREME LUXATION OF THE PATELLAE IN A FOAL.

By W. L. Williams, V.S., New York State Veterinary College, Ithaca, N. Y.

The subject, a filly of trotting breed, foaled May 27, 1897, was of good size and form, was able to stand and suck, and to the attendants appeared well.

The umbilical cord was ligated with a coarse dirty string and the foal, with its dam, kept in a box stall.

It remained apparently well until May 31, when the stifles became much swollen and the foal was unable to stand without assistance.

At this time Dr. Genung was called and found it unable to get up on its hind legs, while the two anterior limbs appeared normal. Each stifle was found inflamed, hot, tender and much swollen. The temperature was somewhat abnormal, though a definite record was not kept; the pulse was accelerated, and the general signs of moderate fever were present. The remnant of the umbilical cord was still present, well dessicated, and the ligature applied at time of birth was *in situ.* No evidence of infection existed at the umbilicus.

A diagnosis of umbilical infection was made and peroxide of hydrogen with salicylate of sodium administered internally and a stimulating liniment applied to the affected joints.

With careful nursing and frequent assistance in reaching the dam's teat the foal continued to thrive generally, though unable to stand erect, but could attain a crouching attitude, erect in front, with complete flexion of the femoro-tibial articulation.

The general line of treatment was continued until July 2d, without material result; the dropsy of the joints had increased, and later with the subsidence of the inflammation had decreased and the synovial capsule had thickened.

At this date Professor Law and the writer found the patient unable to extend the femoro-tibial articulations, nor could they be fully extended by the application of moderate force, while the two fore limbs tended to bend forward at the carpal joints, rendering difficult the maintenance of even the crouching position mentioned for a sufficient period for the foal to suck. The hydrarthroses had extended far beyond the normal outline of the bursæ, especially outwards, extending over the external surfaces of the lower ends of femora and upper ends of tibiæ, the definite outline of the bursæ being lost externally and inferiorly in the general swelling and thickening of the parts. The enlargements were free from abnormal heat or tenderness.

The patellæ were displaced outwards and backwards and could be readily felt opposite the posterior border of external femoral condyles in immediate proximity to the posterior border of the tibiæ at a distance from the heads of these bones corresponding to the tibial points of attachment of the tibio-patellar ligaments.

The femoral trochleæ appeared to be normal, but the patellæ could not be replaced in them by ordinary manipulation. Bed sores were present on the anterior faces of the fetlock joints.

The attitude of the foal when attempting to stand and the positions of the crural triceps group of muscles, especially the outlines of the rectus femoris and vastus externus and the location of the patella of left leg, are shown in Fig. 1. The muscles of the posterior limbs appeared normal in size and form, but the extreme displacement of the patellæ destroyed completely their power to extend the femoro-tibial articulations and to a great degree the extension of the coxo-femoral and tibio-tarsal joints.

The foal was destroyed on July 3d by bleeding and the autopsy revealed the following abnormalties:

The extensor pedis tendon of the left anterior limb was ruptured between its communication with the lateral extensor of the phalanges and the annular carpal ligament within the bursa through which it glides over the carpus, the muscular end of the tendon being indirectly adherent to the carpal ligament through its fibrous sheath, while the distal end was free in the bursa, hæmorrhagic, smooth and enlarged. The direct or main tendon of the extensor pedis of the right anterior limb had parted within its carpal bursa, the superior end had become undistinguishably fused with the communicating division without leaving macroscopical traces of traumatism or inflammation. The ruptured end of the distal portion lay free within the bursa, enlarged, ecchymotic and smooth. The communicating branch of the tendon destined for the lateral extensor of the phalanges instead of consisting of one intact cord was teased out into numerous small fibres for a distance of two inches immediately in front of the carpus. The carpal bursa of the tendon appeared normal.

The vastus externus muscles (Fig. III *c*) were but slightly modified in direction; the rectus femoris (Fig. III *b*) assumed an oblique direction downwards, outwards and backwards, while the vastus internus (Fig. III *a*) was stretched across the femur just above the lower articular enlargement in an almost transverse direction, and seemed pale, thin and atrophied.

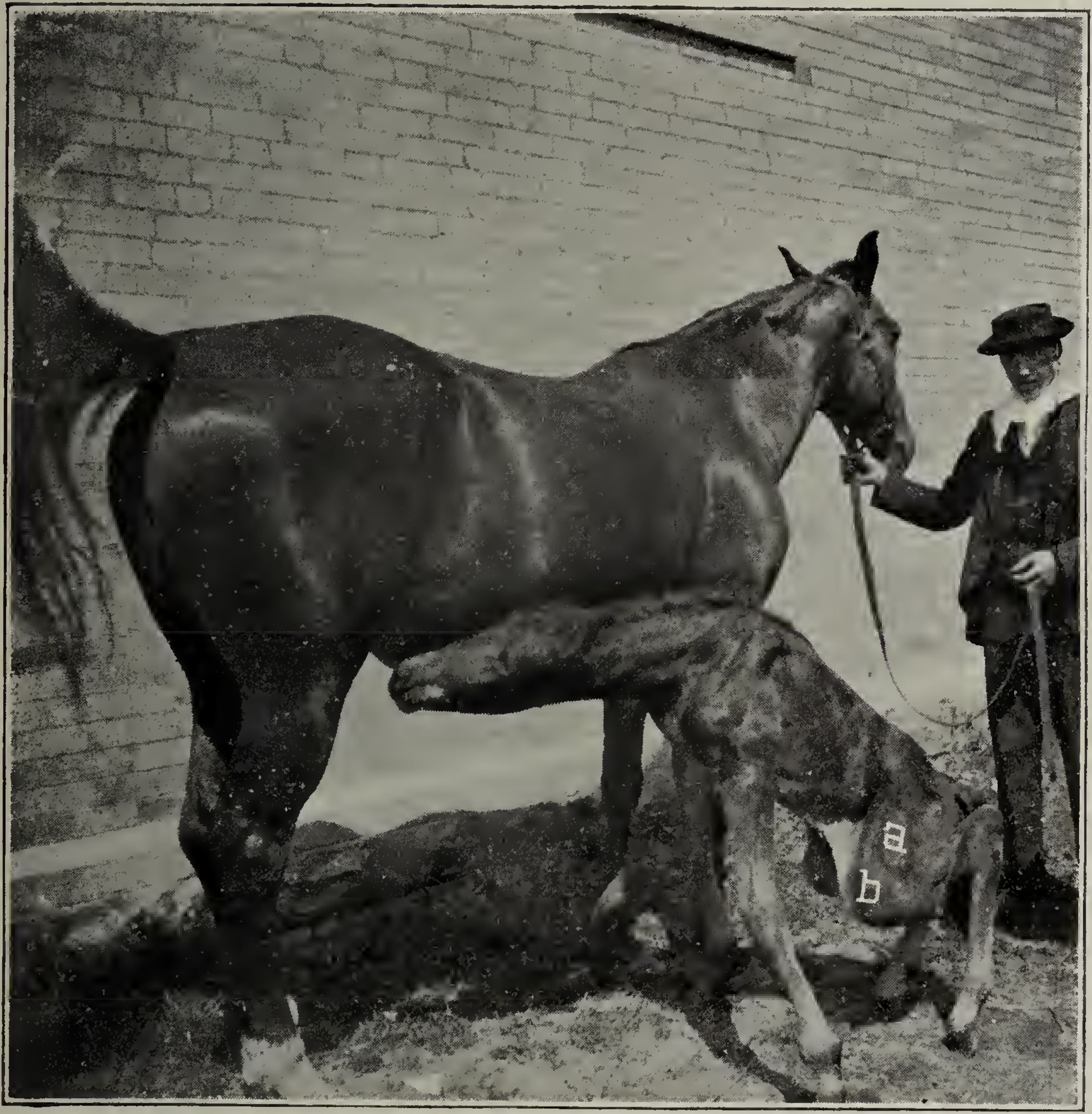
The three tibio-patellar and the capsular ligaments were indistinguishable, being represented by a thick fibrous capsule coequal in extent with the enlarged parts.

The femoro-patellar synovial cavities, which had at an earlier date apparently been much more distended, contained now about one and one-half pints each of an apparently normal synovia, along with an almost equal volume of quite firm, semi-transparent, faintly greenish-yellow synovial clot attached chiefly at the point of union between the capsular ligament and bone, and presenting centrally a free shredded margin three-fourths to one inch thick. (Figs. IV and V *b b*.)

The synovial clots were in places feebly adherent to the articular surface, which was normal, except that at the inferior part of the right femoral trochlea the external ridge had been worn away to a marked extent, denuding it of articular cartilage and subjacent osseous tissue (Figs. IV and V *d*.) As the patella could not at this time be brought in contact with the worn part, the destruction must have occurred at an early stage of the affection.

Well marked ecchymosis was present about the patella and patellar attachments of crural triceps as a result of the dragging of the misplaced parts upon contiguous tissues in the patient's efforts to extend the joint.

The extreme degree of luxation serves to explain and emphasize important facts in the etiology and history of closely allied or generically identical cases. The history and autopsy point to navel infection as the possible cause, this possibility being increased by the ligation of the umbilical cord, by which means the cut ends of two hollow vessels, the umbilical arteries, which would otherwise retract, were fixed in a position rendering their



CROUCHING ATTITUDE OF FOAL DUE TO DISPLACEMENT OF THE TWO PATELLÆ.

a Crural triceps muscles. *b* Left patella.

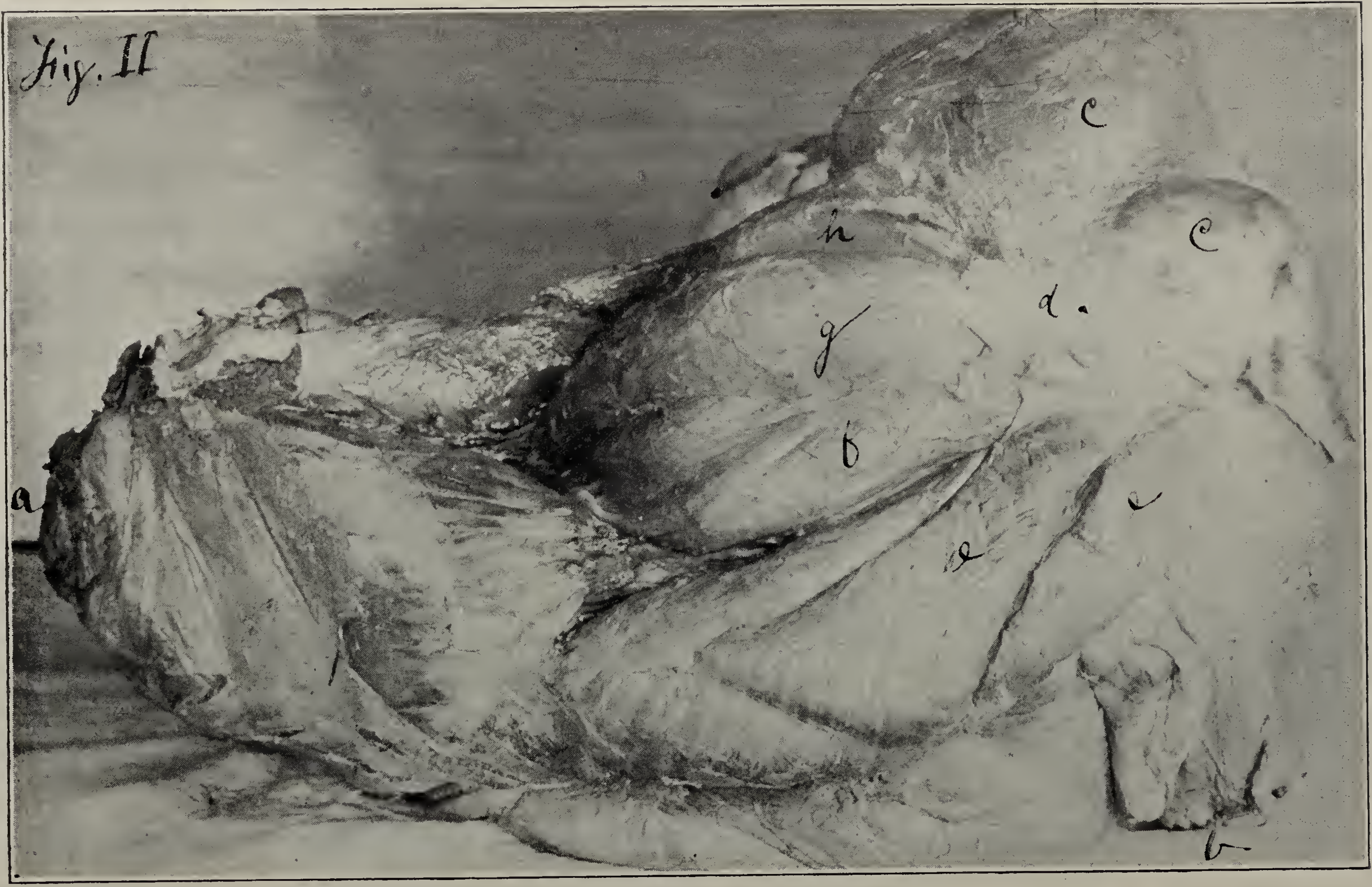


FIG. II.—EXTERNAL VIEW OF RIGHT STIFLE.

a Superior end of femur.
b Transverse section of tibia near its middle.
c c Distended synovial capsule.
d Patella.
e e Long vastus muscle.
f Vastus externus muscle.
g Rectus femoris muscle.
h Vastus internus muscle.

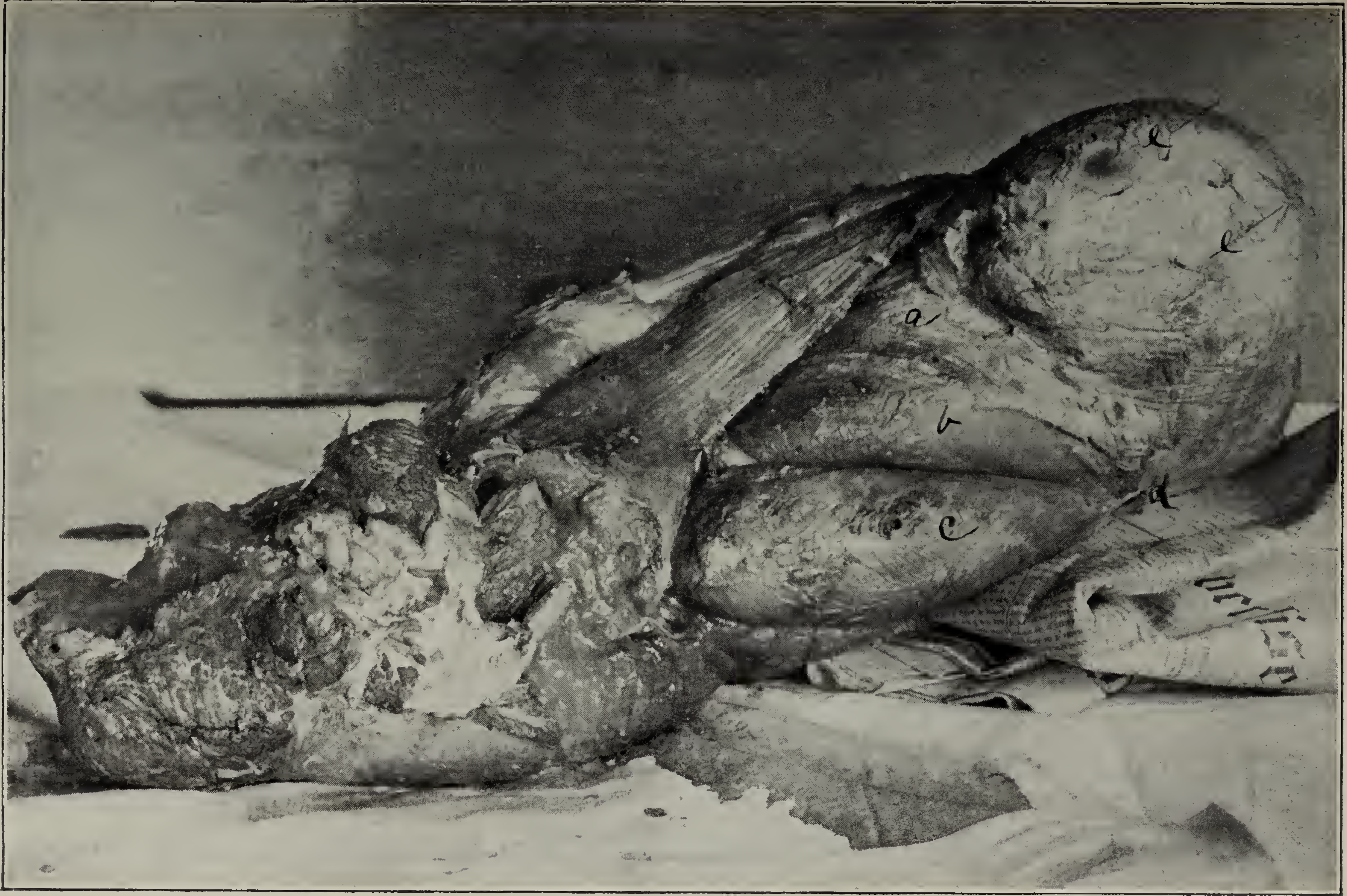


FIG. III.—OBLIQUE LATERAL VIEW OF RIGHT STIFLE.

a Internal vastus. *b* Rectus. *c* External vastus. *d* Patella. *e e* Pins showing position of trochlear ridges.

invasion probable, while the blood and liquids within the tissues of the cord were retained, serving as an excellent culture medium for putrefactive micro-organisms.

The patellar dislocations were evidently due to the hypersecretion of synovia, which, distending the sacs, lifted the patellæ out of their grooves and beyond their retaining ridges when a combination of forces determined an outward luxation.

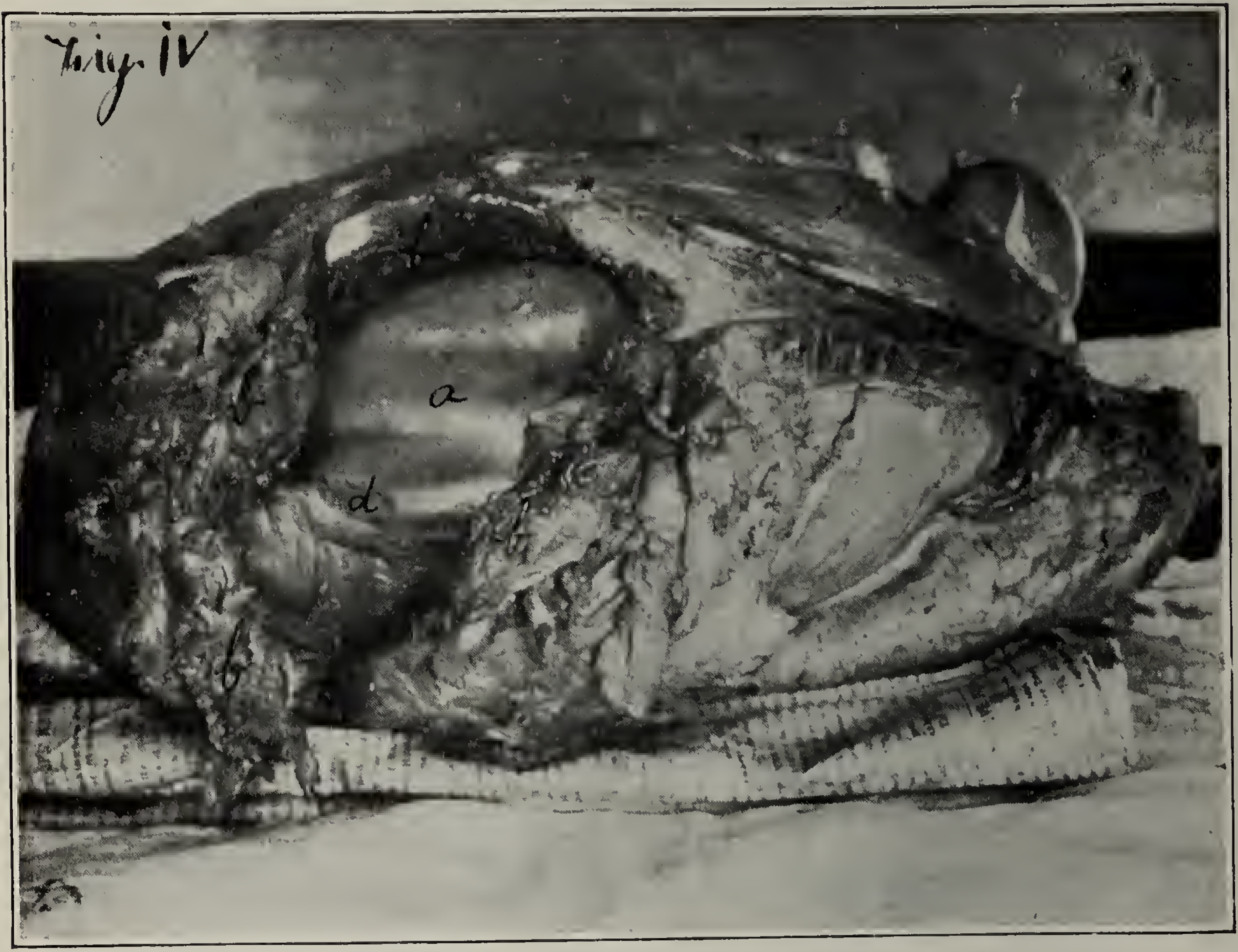


FIG. IV.—ANTERIOR VIEW OF LEFT STIFLE WITH FEMORO-PATELLAR CAPSULE OPENED.

a Femoral trochlea.
b b Synovial clots.
c Location of patella.
d Abraded external trochlear ridge.

It has been held that external luxation of the patella is due to the lesser elevation of the external trochlear ridge, but this alone in such a case could not determine the direction of the dislocation nor even cause luxation at all. In this "floating" luxation the intra-articular pressure is alike in every direction, the walls of the capsule yielding at the various parts in inverse ratio to their strength, supplemented by other contiguous liga-

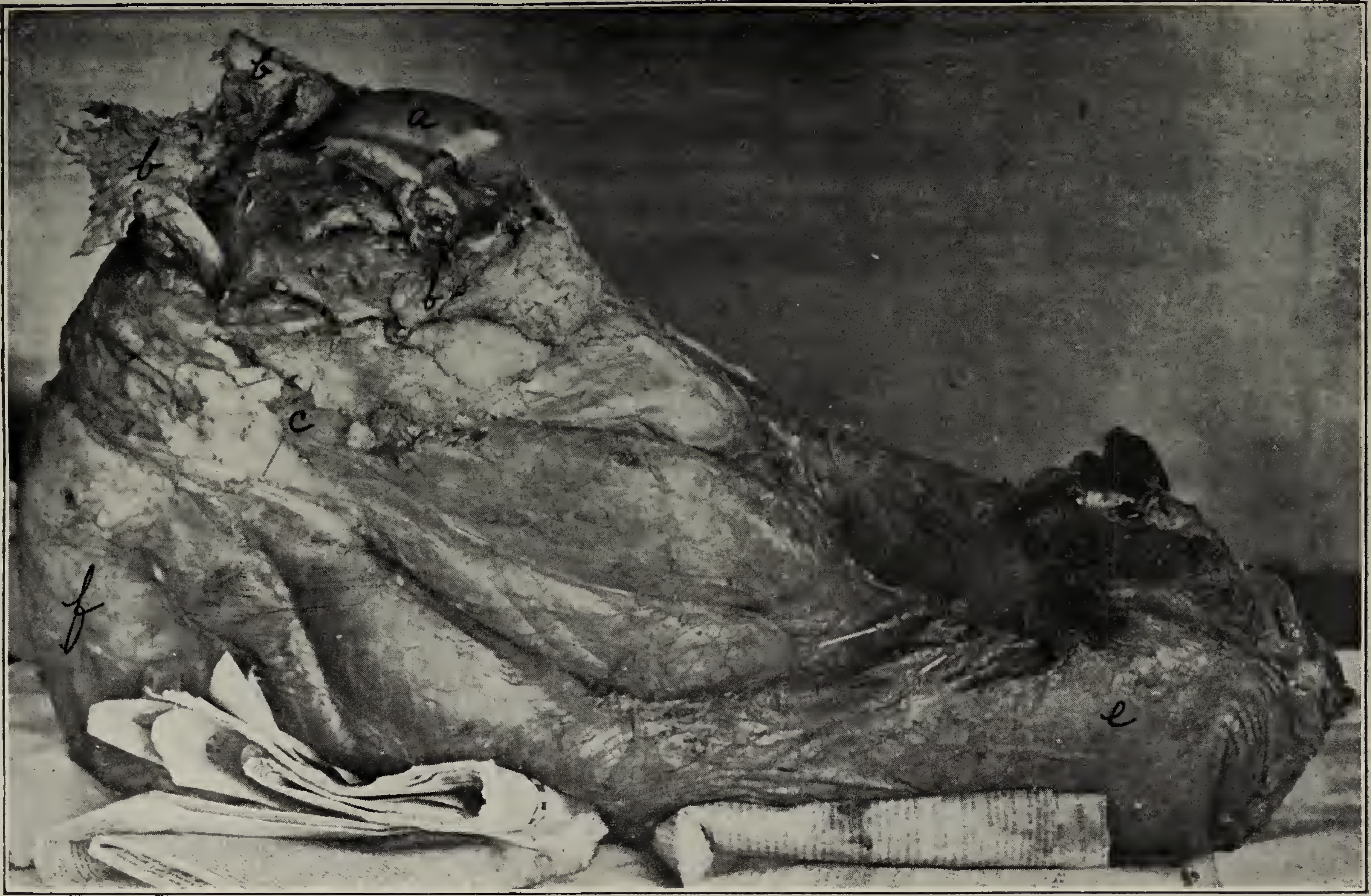


FIG. V.—OBLIQUE LATERAL VIEW OF LEFT STIFLE WITH CAPSULE OPENED.

a Femoral trochlea. *b b* Synovial clot. *c* Patella. *d* Abraded external trochlear ridge. *e* Femur. *f* Tibia..

ments and tissues involved, so that the longer and thinner internal tibio-patellar ligament would yield more readily than the shorter, thicker and stronger external, thus guiding the patella outwards, which is further greatly favored by the disposition of the powerful long vastus muscle, which through its attachment to the external ligament exerts an abducting power upon the patella which the adductors do not fully counterbalance upon this bone, hence we recognize as factors in outward luxation the lesser external ridge, the lesser strength of internal tibio-patellar ligament and the superior abducting power on the patella of the long vastus muscle.

The degree of luxation was evidently intensified by being bilateral so that any effort on the part of the patient to rise could not be centred on a sound limb, but must fall alike on each of two members, neither of which was capable of bearing weight except by an outward dragging upon the patella, which, buoyed out beyond its groove, was readily drawn from its normal location.

The case serves to illustrate, too, what the writer has long maintained, two generically different forms of patellar luxation, the " floating " form occurring almost wholly in young animals and caused chiefly by *navel infection* and *rickets*, in which, buoyed up beyond its groove by a hydrarthrosis, the patella tends to pass outward during flexion when the crural triceps and consequently the internal tibio-patellar ligament is relaxed and inwards during extension, thus denuding and in time wearing away the external ridge of the femoral trochlea ; and the traumatic or direct form, in which the luxation is suddenly produced by violence.

An important fact well emphasized in this case is the value of preventing in young animals the accumulation of sufficient synovia in the femoro-patellar articulation to buoy the patella outwards beyond the level of the trochlear ridges, which is to be accomplished by sufficiently frequent aspirations of the fluid in conjunction with the injection of appropriate remedies into the synovial sac.

[Written Specially for the American Veterinary Review.]

SEROTHERAPY OF TETANUS.

EXPERIMENTAL AND CLINICAL RESEARCHES—TREATMENT OF CONFIRMED TETANUS.

By E. Nocard, Alfort, France.

At the end of 1895 I presented the Academy with the first results obtained by me in the serotherapy of tetanus in horses. Used as a preventive, antitoxic serum had worked wonderfully; applied to the treatment of the confirmed disease, it had almost always failed, even when the serum had been injected in large doses, and also as near as possible to the appearance of the first symptoms of the disease; all acute cases had succumbed; the recoveries that were observed were only cases of chronic tetanus, assuming from the start a slow progress, and which, without doubt, would have recovered without the use of the serum.

It is because tetanus appears only several days after the absorption of the tetanic virus; giving that long incubation the absorbed toxin has had plenty of time to act upon the cells and produce the effects which belong to it, and from which proceed the tetanic manifestations; if, then, the dose of absorbed toxin is sufficient to produce death, nothing will arrest the effects of the intoxication which has gradually taken place for several days; patients treated even by massive doses of serum die just like those that have received no treatment.

To support this interpretation, I reported experiments which seem to prove it.

A few months ago, the *Deut. Med. Wochenschrift*, 1896, No. 43, published a notice stating that the house of Meister Lucius and Brüning, from Höchst-on-the-Main, offered to physicians and veterinarians a serum, prepared by MM. Behring and Knorr, with which it was possible to cure confirmed tetanus, in man and in horses. This serum is delivered in the dry state; the curative dose is 5 grammes; to use it the dose of dry serum is dissolved into 45 grammes of sterilized water, heated to 40 degrees, and the whole solution injected at once; for horses, venous injections are preferable; the serum acts more completely and more rapidly; 24 hours are gained over the subcutaneous injection. For man, also, the intravenous injection is preferable.

"If the injection is made under the skin, success cannot be expected, in acute cases, only if interference has been applied during the 36 first hours after the appearance of tetanus. On that account this remedy must be kept in stores, in large hospitals, and veterinary institutions. The manufacturers send the curative dose, and it is inexpensive; it is sold at 30 marks (over seven dollars), a very moderate price, considering the efficacity of the product" (*sic*).*

Since the publication of the *Deut. Med. Wochenschrift*, German veterinary papers have recorded a certain number of observations concerning tetanic horses treated by the antitoxin from Höchst. The number of successes obtained has not reached half of the cases treated; and yet all failures are not known; I know, for instance, that at the Veterinary Institute of Budapest three tetanic horses were treated and died. My colleague, Prof. Cadiot, of Alfort, has not been more fortunate with two cases, where the disease did not seem exceptionally severe.

The results in practice do not appear to confirm the promises of the *Deut. Med. Wochenschrift.* I know well that the conditions in practice do not very well allow of judgment in such matters. Most commonly, the veterinarian is consulted late, several days after the appearance of the first symptoms; the failure of treatment may be due to this late application in the interference;—and, again, when the tetanic horse recovers after the injection of serum, who can tell if he would not have gotten well without it? On one side, as on the other, there are probabilities; certainty is wanted; all that careful study of the published observations permit us to observe is that in promising success "when the injection will be made in the thirty-six hours following the appearance of tetanus" the author of the note in the *Deut. Med. Wochenschrift* has gone too far; to be convinced of it, the reading of the observation published by Prof. Fröhner, of Berlin (*Monatsh. f. Thierh*, 1897, p. 298), will be sufficient. It can be stated in a few words: "A horse was taken the 29th of January with light trismus: three hours after the appearance of the first symptoms, he received in the jugular 5 grammes of dry antitoxin from Höchst, dissolved in 45 grammes of boiled water. The 30th, the trismus had increased; another injection of 5 grammes of antitoxin. The 31st, severe condition of the animal, tetanus is generalized; third injection of 5 grammes of antitoxin; death during the night."

---

* If our memory is correct, the French dose costs 0.25.

To this observation no one can object to the delay in the interference, nor the insufficiency of the dose of antitoxin injected; the animal had received three times the "curative dose" of dry serum and the first injection had been made three hours after the appearance of the first symptoms; more favorable circumstances could scarcely be expected in ordinary practice; yet the patient died.

Perhaps Fröhner's case was one exceptionally severe?

The truth is that clinical observation is not sufficient to solve the problem; a considerable number of facts, observed in identical conditions, would be necessary. And even then it would be necessary to take into consideration: the district where tetanus has occurred; the nature of the traumatism that caused it; the duration of the incubation, etc.,—conditions that have a great influence upon the severity, march and termination of the disease.

In reality, it is only by experimentation that the real value of a curative treatment of tetanus can be established.

That is what I have endeavored to make in a series of very simple experiments, which have essentially consisted in injecting several horses with a dose of tetanic toxin, sufficiently powerful to kill fatally all inoculated; then, some of these horses being kept as witnesses, the others were treated according to the indications of the *Deut. Med. Wochenschrift*.

The tetanic toxin I used was prepared at the laboratory of Mr. Metchnikoff; it is in powder; it is kept in vacuum, away from light and heat; it has conserved all its strength for more than a year. It kills little mice at the dose of one-thousandth of a milligramme; at this dose it gives lockjaw to large mice, but to be sure to kill them one-thousandth of a milligramme is necessary. 500-gramme guinea pigs died tetanic when they received one-hundredth of a milligramme of that toxin.

In a first series of experiments made upon 16 horses, I calculated what dose minima of that toxin was to be injected to a horse to kill him. For horses weighing from 430 to 480 kilogrammes, the dose minima always fatal is 6 milligrammes; horses that receive but five milligrammes resist in the proportion of 1 to 3, and in one experiment of 1 to 2. In general, it is after an injection of six full days that the first symptoms occur; in some subjects they may be present after five days; in a few others, only 7 days after the incubation. The duration of the disease varies from two to seven days; horses from Hungary or Galicia are affected sooner and quicker; Normandy and Danish horses resist better.

It became easy to establish the exact curative value of the dry serum from Höchst. The only difficulty was its high price. I remarked above that the house from Höchst asked 30 marks (over seven dollars) for each curative dose of dry serum; when we asked for a number of bottles of serum we were asked the double (60 marks) for the dose of 5 grammes of dry serum. Our budget did not permit the expenditures.

I avoided the question in using, in most of my experiments, instead of the serum from Höchst, an equivalent dose of the serum prepared at the Institute Pasteur; it then became necessary to establish the relative value of these two serums. Mr. Metchnikoff has kindly settled this delicate operation; in several instances, he has experimented comparatively with a dry serum delivered by the house of Höchst in December, 1896, and one prepared at Pasteur's in February, 1897, and furnished from horse No. 4. In all those experiments, these two serums have shown that they possess an activity nearly alike; at the dose of 0 gramme 000,000,000,1 (one ten-billionth of a gramme) both serums protect a mouse against a dose of toxin ten times superior to the killing dose and a hundred times superior to the tetanigenous dose. The Pasteur serum has proved itself a little more active than that from Höchst, as in the last experiments, several mice treated with the last serum have had tetanus of the inoculated leg, while those treated by the other serum remain immune.

The Pasteur serum having an activity at least equal to that from Höchst, I was able to multiply my experiments.

March 14, 1897, at 10 o'clock, I was shown four horses, which the 9th of the same month had received under the skin of the neck 6 milligrammes of dry toxin from Pasteur's. One of them (No. 60,738) was evidently tetanic; in the morning, at 7, he was found with his tail elevated, his neck stiff, and he moved as one piece; *he will serve as a witness.*

The three others (52,824, 45,465, 57,624) presented nothing abnormal at 7 o'clock. At 10 they were examined again, their movements were stiff; I considered them taken and injected them in the jugular; to the first I gave 10 grammes of dry serum of Pasteur dissolved in tepid water and representing 100 cubic centimetres of liquid serum; the other two received 100 cubic centimetres of liquid serum.

March 15 the four horses were very sick, their legs as stiff as posts, trismus well marked, appetite gone.

The witness, the 52,824 and 45,465, had fallen, and on the 16th the tetanus was generalized, dying during the night.

In No. 57,624 the disease had marched more slowly; it was generalized only on the 17th, the horse fell on the 18th and died on the 19th.

Therefore the intravenous injection of antitetanic serum made as soon as the appearance of the prodromes of tetanus is powerless in arresting the fatal progress of the disease, even when the injected dose is double that indicated as curative.

⁂

The results are identical when the injection is made with the dry antitoxin from Höchst.

April 28th, at 2.30 P. M., I injected 6 milligrammes of dry toxin, under the skin of the neck, to three Danish horses—Nos. 43,480, 48,993 and 52,663.

May 4th, at 8 A. M., none of these horses seemed sick; brought out of their stalls they were gay, strong and supple in their movements.

At 2 o'clock P. M. nothing was abnormal.

At 5 o'clock, taken out again, No. 48,993 seemed stiff in his neck and loins; his eye was fixed and prominent; the hostler affirmed that he was taken; it was just six times twenty-four hours since he was inoculated. I injected at once in the jugular 5 grammes of dry serum from Höchst (of December, 1896).

The two horses, examined carefully, had nothing abnormal.

May 5th, 6 A. M., the two untreated horses showed no signs of tetanus. At 10 o'clock examined again; No. 43,480 was a little stiff in its walk. I injected at once, in the jugular, five grammes of dry serum from Höchst (of December, 1896), dissolved in 45 grammes of sterilized water.

May 6th, No. 52,663, *left as witness*, was taken.

The 7th, generalized tetanus in all three; abdomen retracted, neck curved, walking as on posts, still some appetite.

On the 8th and 9th symptoms progressed; resisting trismus, entire impossibility to take food.

On the 10th the three horses were still standing, but in a miserable condition.

At 5 o'clock P. M. No. 43,480 (the one treated) fell—and died in the evening.

No. 52,663 (*witness*) fell and died May 12th.

The last died during the night of the 13th.

⁂

No better results are obtained when the injection of antitoxic serum is made twenty-four hours before the appearance of the first symptoms.

March 9th, at 10.30 A. M., I injected under the skin of the neck, 6 milligrammes of dried toxin to five horses, Nos. 42,153, 45,550, 49,645, 54,407 and 55,718.

March 14th, 10 A. M., none of the horses, examined individually and closely, presented the slightest symptoms of lockjaw. To the first three I injected, in the jugular, 100 cubic centimetres of Pasteur antitetanic serum (obtained from horse No. 4 on February 15th); the two other horses were kept as witnesses.

March 15th the five horses presented some suspicious symptoms: in the stable a little elevation of the tail could scarcely be observed; when taken out they showed stiffness of the neck and extremities. The 16th tetanus was well marked in all. They all still ate. The 17th general contractions; tail elevated; neck curved; nostrils dilated; prehension of food almost impossible. The 18th they were still worse; about 10 A. M., No. 45,153 fell, struggled, and died in the evening; one witness (No. 54,407) died the 19th, at 4 A. M.; the other in the evening towards 5 P. M.; the two others fell on the 20th and died the same day.

Therefore, the intravenous injection of a large dose of antitoxic serum is powerless in arresting the development of tetanus, resulting from a dose of toxin, always fatal to witness, even when this injection is made twenty-four hours before the appearance of the first symptom.

⁂

If interference is applied 48 hours before, there are many chances for the patient to escape; sometimes even the appearance of any tetanic symptom is avoided; but the injection must be made with large doses of serum, introduced in the veins.

(1) February 24, 1897, I injected 6 milligrammes of dried toxin under the skin of the neck of two horses, Nos. 46,214 and 49,344.

February 28, in the *jugular* of the first, I injected 100 cubic centimetres of Pasteur serum (obtained February 15th from horse No. 4). The other inoculated horse was kept as witness.

March 2d, 12 o'clock, the witness had certainly taken; his tail was elevated; there was stiffness of the neck and loins. March 3d, tetanus generalized; abdomen retracted; legs stiff as posts; nostrils dilated; head extended on contracted neck; he died during the night.

The horse on treatment escaped all tetanic symptoms.

(2) March 9th, a Danish horse (No. 54,096) received, under the skin, with 13 other horses, 6 milligrammes of toxin.

On the 13th, he received, *under the skin*, 60 grammes of Pasteur serum (obtained February 15th from horse No. 4). Two other horses, (Nos. 54,407 and 55,178), left as witnesses, were taken only on the 15th of March. Therefore, the treatment preceded the appearance of tetanus by 48 hours. Nevertheless, on the 16th, the treated animal was effected; the 18th, the disease was generalized, he died March 21st, two days after the witness.

The dose of serum injected might have been sufficient to save the animal, if the injection had been made in the jugular instead of under the skin.

⁂

A last series of experiments show well the great preventive value of the antitoxic serum; a very weak dose of serum is sufficient to prevent the appearance of tetanus, when the injection is made, even under the skin, a short time after the animal has received the dose of toxin, always fatal for the witnesses.

March 9th, 10 A. M., under the skin of the neck of fourteen horses I injected 6 milligrammes of toxin: of these, three not treated and used as witnesses became tetanic, one (Hungarian) March 14th, the two others (Danish) the 15th. Seven others, treated either at the moment of the appearance of the first symptoms, either twenty-four or forty-eight hours before, contracted a fatal tetanus.

The four last resisted, thanks to a more early treatment.

No. 46,443 (Norman) received under the skin 10 c.c. of Pasteur serum, one hour after the inoculation of toxin; he never presented the slightest symptom.

No. 49,298 (Norman) received under the skin 20 c.c. of same serum twenty-four hours after the injection of toxin. This one has not shown any signs of illness.

No. 54,378 (Danish) received under the skin 30 c.c. of serum, forty-eight hours after the toxin; some stiffness and curvature of the neck existed on the 19th of March, it lasted some two weeks; but the animal kept eating, was gay and his legs supple; he never was very ill; recovery took place rapidly.

No. 60,277 (Hungarian) received under the skin (March 12th) three days after the injection of toxin 40 c.c. of serum. In the morning of March 14th, he was certainly tetanic; the same day at 10 o'clock he was injected in the jugular with 75 c.c. of serum; until March 25, the disease went on progressing, and then gradually diminished to such degree that on April 4th everything was normal with him, except a marked curvature of the neck, on the side where the toxin had been injected.

If the extreme severity of this experiment is taken in consideration—viz., the dose of toxin, always fatal to witness, having been injected all at once and immediately absorbed, one can affirm that, in daily practice, there will be a great many chances to arrest the evolution of tetanus or to prevent its appearance, by interfering even several days after the traumatism. But one must well know that the more the interfereuce is delayed, the greater the dose of serum to inject must be.

⁂

From this long experimental study, I believe I am right in concluding, as I did in 1895, that the curative treatment of tetanus is yet to be found.

This does not mean that the use of antitoxic serum in the treatment of confirmed tetanus must be abandoned.

Far from it! It is my deep belief that the injection of serum is the best mode of treatment that one can employ. Indeed, all those of my colleagues that have treated tetanic horses by injections of serum say they are pleased with it, not because the number of recoveries obtained had been greater, but the disease has been less severe, and when recovery has occurred the convalescence has been shortened.

Besides, it often happens that the traumatic course of the disease escapes all researches and the "eradication of the infected centre" so well recommended cannot be made; the development of the toxins goes on, the tetanic intoxication is increased; it is specially in these cases that serum shall be useful; powerless against toxins already absorbed at the time the treatment is begun, it may destroy, at the time of their formation, those that the undiscovered centre may still produce.

Unfortunately, these cases are very rare, and most often the antitoxic serum does not prevent tetanus progressing to its fatal end. If, then, serum is to be still used in the treatment of confirmed tetanus, the veterinarian who will expect to cure the majority of his patients will be exposed to hard disappointments. To-day, as yesterday, most elementary prudence imposes the preventive injection of serum in all kinds of traumatisms which are known to be frequently followed by tetanus.

RESULTS ATTAINED AND ATTAINABLE BY STATE CONTROL OF TUBERCULOSIS.

By John M. Parker, D. V. S., Secretary Massachusetts Cattle Commission,
Haverhill, Mass.

Read before the United States Veterinary Medical Association, at Nashville, Sept. 8, 1897.

Before considering more fully the subject matter of this paper, you will pardon me if I stop for a moment to notice one or two stray thoughts that have occasionally occurred to me.

It has seemed sometimes in discussing this subject that there has been too great a tendency among the members of the profession to look upon everything as secondary to the question—as to whether a cow reacted to tuberculin or not. It has seemed as if there had been too great a tendency to let everything else go, to pay no attention to anything except tuberculin and tuberculosis. I have often felt that this whole matter should be taken up in a broader, more general way ; that the important question of wholesome milk should receive greater attention than it has. The work being done by the various sanitary boards should be broadened, and widened. They should pay greater attention to the value of cleanliness and light, ventilation and drainage. Tuberculosis is not the only evil to be avoided, and in attending to the surroundings all are helped and both consumer and producer are benefited.

Again, it has seemed to me sometimes as if there had been too much anxiety among certain veterinarians to increase and exaggerate such danger as their might be, not so much for the good of the public as because the more the people became panic stricken the greater the likelihood that their pocket-books would be fattened.

On the other hand, it is only since the introduction of tuberculin that we have had any reason to hope that we may finally be able to control the spread of tuberculosis among dairy cattle. Tuberculin has not only enabled us to rid many individual herds at least temporarily of tuberculosis, but it has greatly modified and changed the generally accepted opinion of tuberculosis.

It has enabled us to gain a truer insight into the mysteries of heredity, and it has shown more clearly the prevalence of tuberculosis.

Probably one of the most important of the new facts brought to our notice through the use of tubeculin is a knowledge of the immense number of latent or undeveloped cases of tuberculosis that exist in every herd. It is startling to see a large number of autopsies made, and note what a large proportion show only very slight evidence of disease. In referring to this matter Bang says : " As soon as tuberculin inoculation was undertaken on a large scale the public was surprised at the very large number of reacting animals, even in herds of healthy appearance. I refer to the work as done first by Koepp in Dorpat, then by Siedamgrotzky and Eber in Saxony, Nocard in France, Malm in Norway, and others.

"The Danish investigations have yielded exactly similar results. Where tuberculosis exists it often has an extent which no one had suspected. The discovery produces at first a benumbing effect and is always very painful to the owner of dairy stock. Because of this it cannot be made too emphatic that there is a great difference between what was formerly termed tuberculosis and what, as a result of the tuberculin test, is now indicated by the same word. When a reacting animal is butchered, the butcher very often finds no trace of tuberculosis and the veterinarian must search carefully to discover the little knots on the lymph glands, frequently the only pathological signs.

"These are especially in the retro-pharyngeal, mesenteric, mediastinal and bronchial glands. The majority of reacting cows have simply latent tuberculosis. In time this may develop further in many cases. But my investigations have shown that such tuberculosis can often remain without development for years, and exert no influence on the general health or the functions of the animal. We cannot conclude from this observation that an animal which reacts with tuberculin is thereby condemned to advancing disease, to wasting away and final death. The reaction simply indicates the possibility of such a result. Whether or not it will prove a reality, we do not know."

Prof. Theobald Smith in an address to the Harvard Medical Alumni notices the same thing when he says: "The need of a better education in animal pathology is well shown by the work undertaken in this country by public authority to restrict, suppress or eradicate tuberculosis among cattle. Tuberculin produces a temporary fever in all infected animals, whether they be in the earliest stage of the disease or in the most advanced stages. In fact the not infrequent absence of any lesion after a tuberculin reaction is explained by the statement that the focus or foci could not be detected. There are a large number of cattle slaughtered on the evidence furnished by tuberculin which are in the earliest stages of the disease. A small focus in a mediastinal gland, perhaps, or in one of the throat or messenteric glands, is all that can be found.

"Pathology has informed us that traces of stationary or healed tuberculosis, unrecognized during life, are not infrequently encountered on the post-mortem table. Are such persons to be placed within the class of diseased or simply infected? I believe that an infected animal is not necessarily an affected or diseased animal, and that no one can predict just what is going to become of a primary focus, whether it will gradually encroach upon neighboring organs or become generalized, or become calcified or cicatrized." (See p. 320 Boston *Med. and Surg. Journal*, Sept. 24, 1896.)

Practically the same thing was demonstrated by Pizzini, who has reported "observations upon lymph glands of persons having died without showing any evidence of tuberculosis. In 12 out of 30 cases examined microscopically and by inoculation in guinea pigs tuberculosis was demonstrated, and the further fact shown that only those guinea pigs inoculated with bronchial glands showed any evidence of disease." (*Annual of Med. Sciences.*)

This is further corroborated by reported observations made at Johns Hopkins University and elsewhere, from the large number of autopsies made on people dying from causes other than consumption that show evidence of undiscovered or healed tuberculosis. From the number of cases in which this occurs it is evident that a larger number of people have consumption at one time or another during life and recover, than there are that die from this disease.

Such a state of affairs is significant and the only inference to be drawn is that tuberculosis is far more prevalent among human beings than we have had any idea of, and in fact that practically the same conditions exist among people that have been found, through the use of tuberculin, to exist in cattle, and if tuberculin were used as a diagnostic agent among people we would probably find that in a large number of cases individuals would react to the test that are at present considered healthy.

Under these circumstances we would repeat the question asked by Prof. Smith, "shall all these people be considered diseased, or only infected ?" We incline to the belief that there is a considerable difference between such *infected* people and those that are *affected* or *diseased.*

In this connection it may be of interest to glance for a moment at the statistics showing the reduction in the death rate from tuberculosis in Massachusetts. During the past forty-five years consumption has steadily and uniformly decreased ; the maximum and minimum death rates being 42.7 per ten thousand in 1853 and 22.7 in 1893.

In Glasgow, Scotland, the figures are almost exactly similar.

In the period from 1860–64 phthisis reached its highest mortality, viz., 4094 per million. In the period from 1890–94 it was 2315, so that in 25 years consumption has been reduced 44 per cent. in fatality without special treatment as an infectious disease.

Unfortunately phthisis is the only form of tuberculosis which has been throughout consistently classified by the Registrar-General as a cause of death.

Then the report goes on to say : "We are therefore shut up the twelve years 1883 to 1894, for evidence of the movement of tuberculosis diseases *other than phthisis.* Dividing them into two periods of six years we find that the death rate from 'phthisis' has fallen from 2849 per million to 2316 and from 'other tubercular diseases' from 1090 per million to 884, in both cases 19 per cent., a result which quite casts into the shade the improvement in Prussia and Saxony, quoted from Cornet, which he puts down to the credit of special prophylaxis. Clearly, then, we are warranted in asserting that among infectious diseases, tuberculosis is the most amenable of all to general hygienic measures, that, in fact from these alone as good results are obtained as from hygienic measures plus isolation, disinfection, etc., in the case of diseases popularly known as infectious. It is not implied that special measures directed against the infectivity might not have produced even better results; but in view of the difficulties in the way of special prophylaxis, it is to be contended that more is to be expected from hygiene." (Report Glasgow Board of Health.)

The special interest attaching to the reduced mortality from this disease in both Massachusetts and Glasgow seems to me to be due to the fact that these improved conditions have been attained entirely as a result of a better knowledge of the disease and a more strict carrying out of hygienic measures.

Such a retrospect is encouraging when one considers that similar results would follow the introduction of like measures when applied to dairy cattle, but before this can be done people must recognize the necessity for it, and the great room for improvement there really is.

Before considering in greater detail the control work that has been done in Massachusetts, let us turn for a moment to some of the other countries and states where such work has been attempted.

In European countries probably the laws in force in Denmark are best known. There for many years past owners have attempted to control tuberculosis by removing diseased animals and having the stalls and stables disinfected, and, as Bang remarks, "These efforts were not without significance. The conditions of health were improved, especially in places where the entire herd was subjected to thorough investigation by a competent veterinarian, and where the owner and veterinarian worked harmoniously together. But even with these conditions it was hardly possible to be entirely freed from the disease. The hidden latent cases always remained, and were continuously coming to the surface."

After the introduction of tuberculin, Bang conceived the idea of dividing the reacting animals from those that did not react, and when the reacting animals showed no physical evidence of disease they were used for breeding purposes and their progeny immediately separated and kept with the healthy lot.

In this way a new healthy herd was gradually built up. The state assisting by providing tuberculin and veterinary services free, animals showing physical evidence of disease are destroyed.

In Switzerland a somewhat similar plan has been adopted. There the state pays half the cost of test, and only entire herds can be tested. All cattle that react must be branded.

The French method is slightly different: there if an animal is found to be diseased, the state tests the entire herd, the owner having the option of keeping those that react for one year or slaughtering them immediately and receiving compensation from the state. All cattle coming into the country must also be tested.

The Government in the Dominion of Canada provides tuberculin free, this being done principally for educational purposes. It is also proposed to test herds in which disease is known to exist, and, as in France, all cattle coming into the country must be tested.

In Ontario the Board of Agriculture have strongly advocated Bang's methods among the farmers. If the milk, they say, from the reacting cows is used for the calves it should be pasteurised.

They state that "It is advisable to fatten quickly the animals that give a reaction with tuberculin, but are apparently healthy, and sell them to the butcher, making calculations to get rid of all reacting animals in the course of 18 months or two years." They also state "Up to the present time these tests for tuberculosis by means of tuberculin have been carried on by experts, veterinarians, etc., but that is no reason why any intelligent man who makes an effort to post himself as to the methods of keeping clean and using the various instruments should not test his own herd from time to time.

In New York, New Jersey, New Hampshire, Maine, Vermont and Rhode Island, owners receive half valuation for cattle killed and found diseased and full valuation if condemned and killed and found free from disease. Pennsylvania, Connecticut, Illinois, Indiana, and other states give limited appraised value. In most of these states tuberculin is used either at the owner's request or in such herds as are known to be diseased. Connecticut relies almost entirely on physical examination.

In Pennsylvania, New Hampshire and Massachusetts experimental work is being conducted in various directions at the present time,and the results will be well worth noticing. In Massachusetts the principles are practically the same as in these other states. The state pays full value for diseased animals with a limit of $60. All cattle coming into the state must be tested, and tuberculin may also be used as an aid to diagnosis on animals condemned on physical examination by a qualified veterinarian, and at the written request of owners, provided they agree in their turn to certain conditions prescribed by the Cattle Commissioners.

In Massachusetts the work of inspection has been, I think, fairly successful ; in considering it, I would divide it into two divisions : 1st, as a factor in the protection of the public health ; 2d, as a help to to the farmers and stock owners in their endeavors to rid their herds of disease. It seems to me that these two points must be considered separately. Many facts must be considered and the matter must be looked at from many points of view before one can gain even a faint idea of the magnitude of the subject, and it seems to me that in view of the many interests involved, since we cannot stamp it out by heroic measures, we should be content if we can make steady and substantial gain.

We have only to look back a very few years to the time when milk was sold and cattle were butchered without any kind of supervision whatsoever. At that time the meat from " coughers " and " bolognas " were placed on the market and milk was sold without any restriction, so far as the health of the cow was concerned.

In 1876 (according to the Report of the Cattle Commissioners for 1895) an act was passed providing for the appointments of inspectors of provisions and animals intended for slaughter.

This was a permissive act, simply providing that the Mayor and Aldermen of cities and the Selectmen of towns may annually appoint one or more persons, who may inspect all provisions and animals intended for slaughter. Under this act, which was taken advantage of by the cities and towns only slightly, it was found to be impossible to organize any systematic inspection of the herds of cattle in the state, and in 1892 the law was so amended as to provide that the same authorities "shall annually in the month of April appoint one or more persons to be inspectors of provisions and of animals intended for slaughter, or kept for the production of milk." Under this latter act, however, no penalty was provided for the failure of the cities and towns to make the appointments required by the act, and it was found necessary to again strengthen the law. Accordingly, in 1893 a penalty was provided for cities and towns failing to appoint inspectors as required by law, and, further, the inspectors were, by this act and for the first time, brought under the partial control of the Cattle Commissioners, by giving the board the right to make appointments where cities or towns failed to do so, and the power to remove incompetent inspectors.

This latter act was approved May 3, 1893, and immediately after its passage this board undertook to collect the names and addresses of the various inspectors; to instruct them in their duties, in so far as they related to the matter of the suppression of contagious diseases among the domestic animals; and to see that, so far as possible, animals intended for slaughter or kept for the production of milk were inspected as thoroughly as circumstances would permit.

The first attempt to collect the names and addresses of the various inspectors was begun on May 12, 1893. Up to about Oct. 15, 1893, only about one-half of the cities and towns in the Commonwealth had complied with this requirement.

From this small beginning, and in the face of many discouragements, the organization of this corps of inspectors has been developed, until now (1895) all but four of the cities and towns in the Commonwealth have made the necessary appointments.

This was a long step in the right direction. The principle involved was right. It secured the inspection of each herd in the state, and as I shall endeavor to show later, it has resulted in an immense amount of good. Of course the system is by no means perfect; the local authorities, except in large towns, rarely appoint qualified men for the position. I hope, however, that before long instead of the local town inspector the state will be divided into districts, each district being in charge of an experienced, qualified veterinarian. In this way the work will be done far more thoroughly and one of the principal objections to the present method will be done away with.

(*To be continued.*)

TREATMENT OF THOROUGHPIN.

By Charles Cowie, M.R.C.V.S., Ogdensburg, N. Y.

A Paper read before the New York State Veterinary Medical Society, at Syracuse, Sept. 15, 1897.

The subject which I have chosen to make a few remarks on before this progressive society may be considered old and threadbare, and, to myself, it has been apparent that I can have but little new on the subject to bring before you, with the exception of a more successful method of treatment than is recommended in most of our text-books.

Thoroughpin is an excessive accumulation of synovia in the bursa of the flexor pedes perforans tendon, situated at the upper and posterior part of the hock. The fluid which it contains can be forced by pressure from one side to the other, and for this reason it derives its name. This derangement or blemish is met with in all kinds of horses, and all ages, but more frequently in young animals. The straight upright hock is said to be more liable to develop it, but I think this is more apparent than real, the bursa being more confined would bulge laterally with the slightest accumulation of fluid.

Before considering the causes of thoroughpin let us glance for a moment at the structure and uses of a bursa in health. It is a thin membrane lining joint cavities and sheaths of tendons, secreting an oily fluid called synovia, to prevent undue friction between structures that move on each other. It is similar to the serous membranes that line the thoracic and abdominal cavities, made up of pavement and endothelian cells and underneath are more or less dense fibrous stroma, containing nerves and blood-vessels. The fluid secreted is of a pale yellow color of an oily consistence. A bursa in normal condition is found to contain only a sufficient quantity to lubricate its interior, but in disease may accumulate such a quantity as to assume large proportions.

In regard to causes : when we consider the almost complete immunity from bursal distention found in other animals, we are led to the conclusion that it is the nature of his work ; and when an animal presents bursal distention, we consider that he has been worked or driven prematurely.

Over-driving, over-working, sprains or other injuries, slipping on pavements or otherwise, will often produce thoroughpin.

With some horses there is a predisposition from an inherited weakness, either local or systemic.

In regard to the pathology : in its first and simplest form it consists of a simple distention of the bursa, with a superfluous quantity of its normal secretion, without any inflammatory action, causing neither pain nor lameness, and due to an increased activity of the cells, the synovia being secreted faster than it can be absorbed or used. In some cases, however, especially when the direct result of a severe sprain, inflammation and lameness are prominent symptoms. In some cases, as time goes on, the bursal walls become thickened and hardened. The contain fluid altered in consistence ; and in the case of wind-galls, has been known to become osseous. In most cases there is no structural alteration whatever, and when once formed persistently remains so.

Treatment of Thoroughpin.—As a rule, the cases we are called on to treat are the better class of horses; a promising colt, a carriage or coach horse, or those being fitted for market. It is a blemish we are called on to remove. Not usually being associated with lameness, we are seldom wanted in the case of the work horse. In cases of a recent nature, and those attended with inflammation and lameness, the form of treatment should be rest, high-heeled shoe, and antiphlogistic measures. Nearly all we meet with are non-inflammatory, and can scarcely be regarded as a diseased condition; some mechanical means must be resorted to in order to remove the fluid and prevent its reformation.

It has long been my opinion that counter-irritation, either in the shape of liniments, blisters or firing, is useless, as there is no irritation there. The compress is also resorted to, but, in my experience, is long and tedious, not surgical, and any benefit derived from it is transient. Puncturing the sac and withdrawal of the fluid is also useless, as it will, in a very short time, fill up again. Puncturing and withdrawal of the fluid, followed up with the injection into the bursa of some irritating fluid, such as carbolic acid and iodine, has sometimes been tried with benefit, but the intense form of inflammation, sometimes of a suppurative nature, that often follows, has caused me to look upon it with disgust. Setons have also the same objection. The most successful method I have found in dealing with thoroughpin, and also applicable to other bursal distentions other than true joint bursæ, and I have operated on several during the past year, is to withdraw the fluid with a fine trocar and canula, puncturing the bursa at its lower margin and on the inside of the leg, manipulating and pressing out as much of the fluid as possible, then driving the round point of the thermo-cautery heated to redness several times into the bursal sac. I found that it is not necessary to fire the other side of the leg deeply, and thus avoid marking where it would be more readily observed. I then apply the ordinary blistering ointment, and in a week or two put the animal to work or exercise.

An adhesive form of inflammation is set up in the interior of the bursa, destroying the greater part of the secreting surface, and in few cases have I ever seen it refill. If it should it only calls for a repetition of the operation.

GLANDERS.

USE OF MALLEINE IN DOUBTFUL CASES.

DIRECTIONS OF THE CONSULTING COMMITTEE ON EPIZOÖTICS IN FRANCE.

Injections of malleine can, as well as inoculations of suspicious products (discharge or pus), be very advantageously employed in the diagnosis of suspicious cases of glanders.

In all the cases where revealing inoculation can be applied (donkey, guinea pig, dog), malleine might also be used ; in fact, ought to be if it gives the complete reaction (hyperthermy, large and painful œdema, prostration, etc.,) the diagnosis, revealed by the positive result of the inoculations, will have a higher degree of certainty ; and, besides, it is not rare to meet with lesions similar to glanders, whose products, inoculated in the peritoneum of male guinea pigs, give rise to the formation of an orchitis very similar to that of glanders ; then the veterinarian might be tempted to advise the slaughter of the sick animal, but the absence of all reaction to the injection of malleine will guard him against this error of diagnosis.

And, again, there are doubtful cases where the revealing inoculation cannot be used, no inoculable material (discharge or pus) being available.

It is especially, then, that malleine injections must be used ; when it gives rise to an elevation of temperature, in the neighborhood or above two degrees, and at the same time, to a warm, painful, lasting large swelling, loss of appetite, chills, prostration, etc., the veterinarian can affirm that the suspicious individual is really affected with glanders and demand the slaughter.

The suspicious animal once condemned and destroyed, what line of conduct is indicated towards the other animals of the same stable?

Actually, the contaminated stable is declared *infected*, all the animals that it contains are submitted to inspections by the sanitary service; the owner cannot dispose of them except to have them killed; he cannot work them unless they do not present suspicious signs, and then only under the regulations prescribed by the authorities; the declaration of infection is raised only when two months have elapsed without the occurrence of another case of glanders in the stable; animals that still present some doubtful symptoms remain under sanitary supervision for a year.

It is rare that a case of glanders remains single in a stable containing a certain number of horses; the rule is, that others take the disease in turns. But, before presenting visible symptoms which suggest precautions against them, they may have spread around them the germs of the disease and have contaminated others; it is in that manner that glanders is propagated and at times remains in large establishments, killing a greater or smaller number of animals.

Injection of malleine, in those which among the contaminated are actually dangerous or may become so, operates to prevent the danger. Therefore it is prudent to submit to malleine all the stable-mates of a horse condemned for glanders:

(1) Those which give the ordinary reaction (hyperthermy, œdema, prostration, etc.) shall be declared suspicious; they should be carefully isolated from the others, marked and submitted to sanitary supervision for a year, as well as those which had presented symptoms which could have some relation to glanders; during this sanitary supervision, injections of malleine shall be renewed (every two months); those which, besides the reaction to malleine, would present any of the clinical signs of glanders (indurated gland, discharge, suppurative lymphangitis, sarcocele, nasal or cutaneous ulceration, etc.), shall be considered as glanderous and destroyed; on the contrary, those which have failed to react to two successive injec-

tions of malleine shall be declared healthy, they can return to work, the owner can dispose of them at his will.

In all cases, subjects declared suspicious by the injection of malleine, shall remain under sanitary supervision as long as they have not failed to react to two successive injections; they can be used as long as they will not present any dangerous *clinical* symptoms, and only under the condition that they will not be allowed to drink in public draughts or go into any other stables but their own.

(2) As to the contaminated horses that have not reacted, they can be used freely, but they must be kept strictly isolated from the suspicious, and their stable, with grooming objects, disinfected; they cannot be sold during the two months that the malleine test shall be applied.

REPORTS OF CASES.

WORMS IN THE APPENDIX OF A PUPPY.

By N. B. RHODES, D.V.S., Tampa, Florida.

I send you by outgoing express a specimen of what has the appearance of a case of appendicitis in a dog. As I have never found a description of such a condition in the dog, will you kindly make examination and report the result through the REVIEW.

The history of the case is as follows: A Mr. Morris, of this city, brought to my hospital a very handsome pointer puppy of, perhaps, four months of age. The little fellow was suffering from distemper, with the upper portion of the lungs affected; temperature 104.2° F., respiration difficult, with occasional light rigor, head and ears drooping, eyes red and watery, stomach distended and sore. The owner informed me that he had not evacuated his bowels during the previous twenty-four hours, and that he had given him two ounces of castor oil the previous night (I saw the little fellow early in the morning). I covered his lungs and chest with oiled silk and light flannel, gave him a good steaming, put him on acetanilid and bisulphate quinine every two hours, and one drop tincture aconite every four hours, and repeated warm water enemas, which, however, failed me up to 10 P. M., when an injection of glycerin had the desired effect, when I left him for the night.

Marked improvement next morning, and toward evening moved around with some disposition to play; showed some hunger, and was allowed a small quantity of beef's liver (previously crushed), thoroughly boiled, into which a little Indian meal had been stirred. The next morning he was apparently in a normal condition, appeared lively and full of play; was quite hungry, and was allowed a moderate meal of the liver and meal. In the afternoon his owner was allowed to carry him home with the bandages still on him, but to bring him to me the next morning, which he did, and the bandages were removed. Two nights later I was informed by the owner that he seemed to be suffering again, and, upon visiting him, found he was suffering from abdominal pains. I gave him morphia to allay pain, and left him for the night. The next morning he was still suffering great pain. Hot poultices and applications of hot salt to the abdomen gave him only slight relief. As much as one-fourth grain morphia hypodermically only overcame the pain and gave him ease for about fifteen minutes. The last few hours he howled incessantly, unless he was in the arms of some one, and then he could not remain still. The autopsy revealed the condition as shown by the specimen.

[Dr. W. J. Coates, of the American Veterinary Hospital, received the specimen, and upon examination found the appendix to be normal—no inflammation nor ulceration; but upon laying it open discovered eight or ten pin worms occupying its cavity.—EDITOR.]

NEW TREATMENT FOR PARTURIENT APOPLEXY.

By FRANCIS ABELE, JR., Quincy, Mass.

I had always had such poor success with parturient apoplexy in cows that I looked around for new ideas—I do not mean original ones, but the treatment of other veterinarians that had success with the disease. I was sure of one thing and that was that most cases died from mechanical bronchitis. It was easy to guess why. Nine out of ten were horribly constipated. Nine out of ten had bladder badly distended. Nine out of ten bloated while on flat of back and died in stupor. So my treatment became this: If called before too much stupor, rouse the patient with cold water thrown in face and ears; then drench with one pound Epsom salts, one-half pound common salt, one-quarter ounce or so of gamboge and same of ginger in two quarts of water at as warm a temperature as she could stand. If too stupid to be roused would not attempt it.

I keep animal propped up on sternum by a grain bag or two and bedding, never allowing head to get around to side.

Rub liniment of ammonia, turpentine and oil along spine and back of horns. Give big enema of warm water and glycerine (one pound). Some of the pellets may have to be removed by hand. I often use two pailfuls of water. Next draw urine with a catheter. This usually takes some little time and patience with me.

I then leave the attendant with a bucket of cold water and a quart of medicine, with orders to dash the water into her face if drowsy and to milk her and roll her over to other side and give medicine every two hours.

The medicine I leave is

℞	Fl. extr. jaborandi,	℥ i.
	Ether sulph.,	℥ ii.
	Fl. extr. aconite,	ʒ i.
	Fl. extr. nux vomica,	℥ ss.
	Olei lini.,	ad Oij.

Mix. Sig. Give tablespoonful on tongue every two hours after turning patient over.

It is needless to say she is aroused when she gets it or that she cannot choke much on it.

I have lately had very good success with this treatment.

LARGE CALCULUS FROM A MARE WITHOUT CEASING WORK.

By William Jakeman, D.V.S., Halifax, N. S.

About a month ago I was asked on the street to look at a gray mare, one of a hack pair, which the driver said was continually dribbling urine, which could be readily seen on her quarters, and an offensive odor was quite observable. I told the owner, who was standing by, to send her to my place and I would make an examination and determine, if possible, the cause of the trouble. She did not come, however, until last week, being kept constantly at work. She was a sorry-looking sight, passing now constantly a mixture of blood and urine. After cleansing her, I placed a twitch upon her nose and secured one fore leg, and then passed my hand into the vagina, when I could feel the bladder shriveled, contracted, with greatly thickened walls, and containing a hard substance, which I decided was a calculus. On passing my finger into the meatus urinarius I found it greatly dilated, so much so that with a little manipulation I could get two fingers in and could feel the calculus. I then injected into the bladder a quantity of carbolized oil, and with the use of a pair of long forceps and a little patience I succeeded in extracting the stone, which weighed 2½ ounces and measured 2½ by 3 inches and about 1 inch thick, with a very rough surface. I have washed the bladder daily with a solution of boracic acid. The mare has been kept at work, and to-day urinates quite normally, and has improved in condition.

To the readers of the REVIEW this may not be of much interest, but to me it is, on account of the mare doing her share of work each day, and the stone being removed without throwing.

GRAFTING DOG SKIN ON SHETLAND PONY.

By GEORGE COHEN, D.V.S., New York City.

On the first day of July, 1897, I was called upon to treat a buckskin mare, four years old, 10¾ hands high, suffering from a severe inflammation, which was manifested by a wound six and one-half inches wide and about nine inches long on the superior face of the superficial gluteus muscle. The only history I could obtain was that about a week previous to my call the owner, Mr. Abraham Levy, of Arverne, Long Island, was driving her, and suddenly a large bug, resembling the common stinging bee, alighted upon the animal at the point of the wound, a small stream of blood was noticed oozing from the wound caused by the insect.

I treated the wound antiseptically, and noticed in a few days time that the skin refused to heal and no granulations were present. The owner valuing the animal as a pet, and not desirous of losing a few dollars in these hard times, I deemed it advisable as heroic treatment to try skin grafting. The realization was greater than the anticipation, for, after following closely the mode of operation of skin grafting in the human subject, I was rewarded by seeing healthy granulation taking place, and to-day the wound is only noticeable by a little different color in hair, as the dog's hair was of a lighter color than that of the mare.

VALVULAR DISEASE OF HEART IN THE HORSE.

By FRANCIS ABELE, JR., Quincy, Mass.

A horse had history of having a "fit" every time they took him out. It was a noble brown high-school horse, about eleven years old; was one of a gentleman's pair, and good in saddle or harness, or single or double. He had a nervous disposition, but was perfectly controlable. Was told he would begin to sweat, seem in pain and showed unmistakable expression of what would happen, would reel, possibly fall. When up would go right along about his business. They had bled him, cut down his grain, etc., but all to no purpose; then called the veterinary.

Suspected, so examined heart. Found it fluttering; probably due to stranger's presence. Abruptly it slacked to almost normal, but about every fifth beat was skipped.

Prognosed no recovery, but as owner wanted him given every chance, ordered him at pasture, and daily administration of digitalis and potass. iodide. One week later, found no fluttering (he was probably used to my examination), but heart beats were even more irregular. Diagnosed valvular disease of heart. Like the horse with the thrombus, how many of us would pass him for sound.

THE TUBERCULIN TEST IN MASSACHUSETTS.

REPORT OF THE EXPERTS EMPLOYED BY THE LEGISLATIVE COMMITTEE.

(*Continued from page 411.*)

We conclude this month the voluminous report of the special joint committee of the Massachusetts Legislature appointed to investigate and report upon the findings in a large number of cattle in the vicinity of Lowell which had been condemned by the Cattle Commissioners under the tuberculin test. In the July issue appeared the majority and minority reports of the committee; the August number contained the reports of three of the five veterinarians employed as experts—Drs. Ernst, Smith and Kinnell; the September REVIEW printed the report of Dr. Billings, while this October number concludes the entire document with the findings of Dr. Charles R. Wood.

REPORT OF CHAS. R. WOOD, V. S.

LOWELL, MASS., May 6, 1897.

To the Honorable Committee of the Senate and House of Representatives, Commonwealth of Massachusetts.

GENTLEMEN:—In sending you my report of the examination of the cows killed by your order at the Brighton Abattoir, I will say that, of the number killed, a large percentage was so slightly affected with tuberculosis as to give one the impression that so much wanton destruction of meat was little less than farcical.

Any animal exhibiting tuberculosis to any marked extent without any question whatever should be destroyed, and the meat condemned as an article of food; but when the percentage of tuberculous matter is so small as to be determined only by the aid of a powerful microscope, the percentage of poisonous element must necessarily be very small, and the liability of transmission to human beings when taken as an article of food must be very mythical.

However, from the standpoint of scientists it only requires the development of a very small nodule of tuberculous matter to impregnate the whole system. Be that as it may, meat impregnated with just such a poisonous element has for years been eaten without a great amount of damage being done in regard to the health of the people. On general principles, no one cares to partake of the meat of diseased cows when it can be avoided; and no doubt very stringent measures are taken to prevent such. We have ample evidence of that.

Of the 130 cows that were condemned and killed, and subjected to a rigid examination, not in a single instance was the udder found diseased, with the exception of the presence of garget (even when the deposits of tuberculous matter were quite large in other organs), showing that the danger from partaking of the milk from these cows was comparatively small.

Of the 20 cows killed and examined that did not react from the tuberculin test, 7 were found more or less diseased, showing beyond a possible doubt that the tuberculin test is not infallible, and that it does not determine, by reaction after being injected, the presence of tuberculous matter, as in many cows that did react, only developed the fact of a pus cavity existing in some part of the animal's anatomy, generally due to the presence of a foreign body, as in many cases were found nails and hay wire embedded in the walls of the large stomach. If by the injecting of tuberculin the percentage of tuberculous matter could be ascertained and located, it would be of immense value as an agent. The fact of several cows reacting after being tested with that, and on post-mortem examination no tuberculous matter found, only an abscess, shows that much is to be learned in regard to its use before it can be thoroughly relied upon. If it is an established fact, which I doubt very much, that cows affected with a very small percentage of tuberculous matter, which is not visible to the naked eye, can transmit the poisonous elements it contains to human beings when partaken of as food, then we shall have to eschew beef as an article of food, and submit to have all the cows destroyed and the carcasses converted into fertilizer.

Very respectfully yours,
Chas. R. Wood, V. S.

The following post-mortem findings accompany Dr. Wood's report:

Examination of Tuberculin-tested Cattle from Lowell at Brighton Abattoir, April 13, 14, 15 and 21.

NUMBER OF EXAMINATION.	Number of State Tag	Name of Owner.	Glands of Throat.	Lungs and Adjacent Glands.	Liver and Attached Glands.	Udder and Attached Glands.
1	10224	A. J. Thissell	Tuberculous	Glands tuberculous, lungs apparently not	Nothing found	Nothing found.
2	10203	“ “	Nothing found	“ “ “	“ “	“ “
3	9622	C. E. Jones	“ “	“ “ “	“ “	“ “
4	9697	Osborn Merrill	“ “	“ “ “	“ “	“ “
5	10254	“ “	“ “	“ “ “	Several tuberculous nodes in substance of liver	“ “
6	9677	“ “	Tuberculous	“ “ “	Nothing found	“ “
7	10214	“ “	Nothing found	Glands tuberculous, several centres of disease in lungs	Several small nodes of tuberculosis in substance	“ “
8	9693	C. E. Jones	Right gland tuberculous, left apparently not	Lungs and glands badly tuberculous.	“ “ “	“ “
9	10261	Osborn Merrill	Nothing found	Glands tuberculous	“ “ “	“ “
10*	—	—	—	—	—	—
11	9640	C. E. Jones	Nothing found	Glands tuberculous	Glands and liver tuberculous	Nothing found.
12	10234	Osborn Merrill	Tuberculous	Lungs and glands badly tuberculous.	Numerous tuberculous nodes in substance	“ “
13	10237	“ “	Nothing found	Lungs and glands tuberculous	Nothing found	“ “
14	9667	“ “	“ “	“ “ “	Glands tuberculous, liver apparently not	“ “
15	10288	“ “	“ “	“ “ “	Nothing found	“ “
16	9630	“ “	“ “	Glands slightly tuberculous	“ “	“ “
17	9637	“ “	“ “	“ “ “	“ “	“ “
18	10262	“ “	“ “	“ “ “	“ “	“ “
19	10298	“ “	“ “	Glands tuberculous, one small node in lungs	“ “	“ “

20.......	9678	" "	One gland tuberculous, other apparently not	Scattered nodes in lungs, glands also tuberculous..............	"	"	"	"
21.......	9670	F. A. Fox......	Nothing found......	Glands tuberculous..............	"	"	"	"
22.......	9681	" "	" "	Lungs and glands tuberculous. ...	"	"	"	"
23.......	9639	" "	" "	" " "	"	"	"	"
24.......	9662	" "	Tuberculous........	" " "	"	"	"	"
25.......	9679	" "	Nothing found......	Glands only tuberculous..........	"	"	"	"
26.......	9671	" "	Tuberculous........	Large centres of tuberculosis in lungs, glands also.............	"	"	"	"
27.......	9634	Osborn Merrill..	Nothing found......	Glands tuberculous..............	"	"	"	"
28.......	9675	F. A. Fox......	Tuberculous........	Lungs and glands tuberculous.....	"	"	"	"
29.......	9695	" "	"	" " "	"	"	"	"
30.......	9645	Osborn Merrill..	Nothing found......	Glands tuberculous...	"	"	"	"
31.......	9673	F. A. Fox......	" "	Glands and one lung slightly tuberculous, other lung nothing found.	"	"	"	"
32.......	9631	" "	Tuberculous........	Small node in one lung, gland tuberculous......................	"	"	"	"
33.......	9611	" "	Nothing found......	Nodules in both lungs, glands also tuberculous..................	"	"	"	"
34.......	9615	" "	" "	Node in one lung, glands tuberculous.......	"	"	"	"
35.......	9674	" "	" "	Glands tuberculous..............	"	"	"	"
36.......	9646	" "	Tuberculous........	Nodes in both lungs, glands also tuberculous..................	"	"	"	"
37.......	9614	" "	Nothing found......	Glands and portion of right lung tuberculous....	"	"	"	"
38.......	10284	Osborn Merrill..	Tuberculous........	Glands and portion of left lung tuberculous..........	"	"	"	"
39.......	9601	F. A. Fox......	Nothing found	Glands and portion of right lung tuberculous..................	"	"	"	"
40.......	9626	Osborn Merrill..	" "	Both lungs and glands slightly tuberculous....................	"	"	"	"
41.......	10289	" " ...	" "	Nodes and cheesy abscess in right lung, glands tuberculous.......	"	"	"	"

---

* Did not belong to this lot. Hay wire in stomach, penetrating organs of chest and causing serious disturbance. No tuberculin reaction.

Examination of Tuberculin-tested Cattle, etc.—Continued.

NUMBER OF EXAMINATION.	Number of State Tag.	Name of Owner.	Glands of Throat.	Lungs and Adjacent Glands.	Liver and Attached Glands.	Udder and Attached Glands.
42	10264	N. L. Peavy	Nothing found	Nothing found	Small centre of tuberculosis in one of the glands	Nothing found.
43	9659	C. E. Jones	“ “	One node, as big as a walnut, of tuberculosis in right lung	Nothing found	“ “
44	9683	“ “	“ “	Glands tuberculous	“ “	“ “
45	10287	Osborn Merrill	Tuberculous	Glands badly tuberculous, small centre in left lung	One gland on liver tuberculous	“ “
46	9608	F. A. Fox	Nothing found	Tubercular abscess in left lung, small centre in right	Nothing found	“ “
47	9617	C. E. Jones	“ “	Glands tuberculous, left lung slightly so	“ “	“ “
48*	9629	F. A. Fox	“ “	Nothing found	“ “	“ “
49	10231	Osborn Merrill	“ “	Small node in left lung, glands tuberculous	“ “	“ “
50	9620	C. E. Jones	“ “	Nodes of tuberculosis in right lung	“ “	“ “
51	10293	Osborn Merrill	“ “	Gland slightly tuberculous, one centre of tuberculosis in right lung	“ “	“ “
52	9689	F. A. Fox	“ “	Glands and both lungs badly tuberculous	“ “	“ “
53	9609	“ “	“ “	Nodes in each lung, glands tuberculous	“ “	“ “
54	10232	Osborn Merrill	Tuberculous	Node in both lungs, glands tuberculous	“ “	“ “
55	9621	“ “	Nothing found	Glands only	“ “	“ “
56	9613	C. E. Jones	“ “	Two small centres in left lung	“ “	“ “
57	10243	Osborn Merrill	“ “	Glands tuberculous, one centre in right lobe	“ “	“ “
58	10285	“ “	Tuberculous	Glands and lungs tuberculous	“ “	“ “
59	9665	F. A. Fox	Nothing found	“ “ “	“ “	“ “
60	9638	“ “	“ “	“ “ “	“ “	“ “

61......	9660	" "	" "	Glands only....................	" "	" "
62.......	9656	" "	" "	Glands, and nodes in one lung....	" "	" "
63.......	9666	" "	" "	Lungs and glands tuberculous.....	" "	" "
64.......	9682	C. E. Jones.....	Tuberculous........	Glands and one lung tuberculous..	" "	" "
65.......	9605	F. A. Fox......	"	Glands and both lungs tuberculous	" "	" "
66.......	9658	Osborn Merrill..	One gland tuberculous	" " " "	One of the glands tuberculous........	" "
67.......	9625	F. A. Fox.....	Nothing found......	One or two tubercles in one gland..	Nothing found......	" "
68.......	9603	" "	" "	Very slight tuberculosis in two glands	" "	" "
69.......	9619	" "	" "	Glands only, and slight...........	Abscess in liver, not surely tuberculosis. glands slightly tuberculous........	" "
70.......	9607	" "	" "	Glands tuberculous..............	Nothing found......	" "
71.......	9618	" "	" "	Lungs and glands tuberculous. ..	" "	" "
72.......	9604	" "	" "	Glands only...................	" "	" "
73†......	9612	C. E. Jones.....	" "	Nothing found..................	" "	" "
74.......	9660	F. A. Fox......	Tuberculous........	Lungs and glands tuberculous.....	" "	" "
75.......	9684	" "	"	One lung and the glands tuberculous	" "	" "
76.......	10300	N. L. Peavy....	Nothing found......	Lungs and glands tuberculous.....	" "	" "
77.......	9650	F A. Fox......	" "	" " "	" "	" "
78.......	9657	" "	" "	Glands only...................	" "	" "
79.......	9668	" "	" "	Lungs and glands tuberculous.....	" "	" "
80.......	9672	" "	" "	" " "	" "	" "
81.......	9635	" "	Tuberculous........	" " "	" "	" "
82.......	9624	" "	Nothing found... ..	" " "	" "	" "
83.......	9627	" "	" "	" " "	Probably a tuberculous abscess......	" "
84.......	9606	" "	" "	" " "	Tuberculous abscess in liver..........	" "
85.......	9652	" "	" "	Lungs and glands excessively tuberculous......................	Nothing found......	" "
86.......	9700	" "	" "	Both lungs and glands tuberculous	" "	" "
87.......	9676	" "	" "	Glands only...................	" "	" "
88... ...	9669	" "	Tuberculous........	" "	Tubercular node in liver......... ..	" "

---

* A good-sized tuberculosis centre at left stifle-joint.

† Dr. Ernst took specimens for microscopic examination.

Examination of Tuberculin-tested Cattle, etc.—Concluded.

NUMBER OF EXAMINATION.	Number of State Tag.	Name of Owner.	Glands of Throat.	Lungs and Adjacent Glands.	Liver and Attached Glands.	Udder and Attached Glands.
89......	9602	F. A. Fox......	Tuberculous........	Glands and lungs tuberculous.....	Nothing found......	Nothing found.
90......	10266	Osborn Merrill..	“	Glands only....................	“ “	“ “
91......	9685	R. S. Fox......	Nothing found......	Nothing found..................	Questionable; a peculiar abscess in liver.	“ “
92......	10222	E. T. Fox......	“ “	One small tubercle in one gland...	Nothing found......	“ “
93......	9632	R. S. Fox......	“ “	“ “ “ “ ...	“ “	“ “
94......	9680	“ “	“ “	Glands tuberculous, one node in lungs.......................	“ “	“ “
95......	9628	“ “	“ “	Glands slightly tuberculous.......	“ “	“ “
96......	9644	“ “	“ “	Glands and lungs tuberculous. ...	“ “	“ “
97......	9692	“ “	Tuberculous........	“ “ “	Glands of liver, also abscess in liver, tu berculous.	“ “
98......	10238	F. P. Fox......	Badly tuberculous...	“ “ “	Glands tuberculous, numerous nodes in liver............	“ “
99......	9691	R. S. Fox......	One gland tuberculous	Glands slightly tuberculous.......	Nothing found......	“ “
100......	10256	E. F. Fox......	Nothing found......	Glands and lungs...............	Crural gland; also tuberculous gland...	Glands tuberculous.
101......	10269	D. S. Fox......	Tuberculous........	Lungs and glands badly tuberculous.	Mesenteric glands tuberculous, nothing found...........	Nothing found.
102......	9664	R. S. Fox......	Nothing found......	Glands slightly tuberculous.......	Nothing found......	“ “
103......	9663	“ “	“ “	Glands slightly tuberculous, abscess in right lung.................	“ “	“ “
104......	10294	F. P. Fox......	Tuberculous........	Glands bad.....................	Mesenteric glands tuberculous........	“ “
105......	10259	“ “	Nothing found......	Glands only	“ “ “	“ “
106......	10271	Mr. Brown. ...	One maxillary and one parotid gland.	“ “	Nothing found......	“ “
107......	10213	D. S. Fox......	Nothing found......	Glands slightly tuberculous.......	“ “	“ “
108......	10218	F. P. Fox......	“ “	Glands and lungs tuberculous.....	“ “	“ “

109	9693	R. S. Fox	Tuberculous	Nothing found	“ “	“ “
110	10221	E. T. Fox	Nothing found	One gland only, and very slightly tuberculous	“ “	“ “
111	10208	D. S. Fox	“ “	“ “ “	“ “	“ “
112	10239	E. T. Fox	“ “	Glands only	“ “	“ “
113	9643	R. S. Fox	Tuberculous	Glands and lungs	“ “	“ “
114	9687	“ “	Nothing found	One gland	Glands tuberculous	“ “
115	10270	D. S. Fox	Tuberculous	Glands and lungs	Nothing found	“ “
116*	10265	F. T. Fox	Nothing found	“ “	“ “	“ “
117	10217	“ “	“ “	Glands only	Mesenteric glands	“ “
118	9623	R. S. Fox	“ “	Tuberculosis in glands and lungs	Nothing found	“ “
119	9698	“ “	“ “	Badly tuberculous, grapes all over lungs also	Glands and liver	“ “
120	10277	E. T. Fox	“ “	Glands slightly	Nothing found	“ “
121	10226	“ “	“ “	One tubercle in axillary gland	“ “	“ “
122	9610	R. S. Fox	“ “	Nothing found	“ “	“ “
123	10219	D. S. Fox	“ “	Glands only	“ “	“ “
124	9688	R. S. Fox	“ “	Nothing found	“ “	Glands of udder slightly tuberculous
125	9655	“ “	“ “	Glands only	“ “	Nothing found.
126	9616	“ “	“ “	Glands and lungs	“ “	“ “
127	10279	E. T. Fox	“ “	“ “	“ “	“ “
128	9633	R. S. Fox	Tuberculous,	Nothing found	Mesenteric glands	“ “
129	10263	E. T. Fox	Nothing found	One gland only	Nothing found	“ “
130	9654	R. S. Fox	Tuberculous	Glands and lungs	“ “	“ “

* Calf.

Examination of Twenty Cows from Lowell and Vicinity, belonging to Various Herds that did not react to the Tuberculin, Brighton Abattoir, May 4, 1897.

NUMBER OF EXAMINATION.	Number of State Tag.	Name of Owner	Glands of Throat.	Lungs and Adjacent Glands.	Liver and Attached Glands.	Udder and Attached Glands.
1	9103	Mr. Thissell	Nothing found	Nothing found	Nothing found	Nothing found.
2	9145	Mr. Jones	" "	Glands tuberculous	" "	" "
3	9132	Mr. Merrill	" "	" "	" "	" "
4	9158	Mr. Thissell	" "	Nothing found	" "	" "
5	6576	Mr. Merrill	" "	" "	" "	" "
6	9137	Mr. Fox	" "	" "	" "	" "
7	9117	Mr. Thissell	" "	" "	" "	" "
8	9194	" "	" "	" "	" "	" "
9	6524	Mr. Jones	" "	" "	" "	" "
10	6558	Mr. Thissell	" "	" "	" "	" "
11	9184	Mr. Fox	" "	" "	" "	" "
12	9101	" "	" "	" "	" "	" "
13	6530	Mr. Thissell	" "	Diseased liver	" "	" "
14	9162	Mr. Jones	" "	Glands and node in one lung	" "	" "
15	9173	Mr. Merrill	" "	One tubercle in bronchial gland	" "	" "
16	9167	Mr. Thissell	" "	Nothing found	" "	" "
17	9119	Mr. Jones	" "	One tubercle in bronchial gland	" "	" "
18	9104	Mr. Thissell	" "	Bronchial and mesenteric glands	" "	" "
19	9176	Mr. Jones	" "	Nothing found	" "	" "
20	6587	Mr. Merrill	" "	Bronchial and mesenteric glands	" "	" "

EXTRACTS FROM EXCHANGES.

FRENCH REVIEW.

INTESTINAL PERFORATION IN A MULE—ABDOMINAL ABSCESSES—SPLENIC HÆMORRHAGE—PERITONITIS.—How true the author was when he wrote: "So much was not necessary to kill the poor animal." Mr. Piot Bey relates that the animal was shown to him because of its having been affected with light colics for six or seven days back. At his visit he finds the animal very sick with symptoms of abdominal trouble; orders her to be taken back to her stable, where she lies down and dies in the afternoon. At the post-mortem extensive lesions of various natures are found. On opening the abdomen, marks of extensive peritonitis are found (abundant collection of bloody serosity, coloration of the intestines, engorged condition of the peritoneum). At the sternal curvature the colon is adherent to the median line near the xyphoid cartilage, and there is found an abscess as big as an egg, containing a pus similar to that found in strangles. Through the folds of the great omentum, another of the same size and nature is also opened. The spleen presents on its internal surface a projecting nodosity, covered with a clot of blood, intimately united to the organ; the removal of this clot exposes a straight laceration of the splenic capsula. This nodosity extends into the spleen, and is in continuation with its intimate structure. On the small intestine there is an almost straight perforation, some three centimetres long, with edges ragged, ecchymosed, ulcerated (evidently an *ante-mortem* lesion). The other organs were comparatively healthy. While the author is satisfied to attribute the abscesses to a gourmy diathesis, he is at a loss to explain the lesions of the spleen or those of the intestines.—(*Rec. de Med. Vet.*)

STRANGULATION OF THE INTESTINES BY THE PEDUNCLE OF A LIPOMA.—The presence of lipomas in the abdominal cavity, attached on the peritoneal folds of the mesentery, is well known, and many have been found at post-mortems of animals where they had remained harmless. But unfrequently also they are the cause of severe alterations in the situation of abdominal organs and give rise to serious or even fatal results. MM. Rochard, Durand and Magnin report, in the *Recueil de Med. Vet.*, the case of a 16-year-old gelding, which was taken with colics, and, notwithstanding treatment, died in a few hours. At the post-mortem they found on the mesentery at about 6 metres (say 18 feet) from the pylorus, near the small curvature of the intestine, a small lipoma (weighing 75 grammes—two ounces and a half), supported by a peduncle, 10 centimetres long, and which had rolled round a loop of intestines, 35 centimetres long, and strangulated. The strangulation was so severe that it had made a deep mark on the intestinal surface. The tumor was formed by a mass of soft fat enclosed in an envelope from the mesentery; the peduncle was made of the same peritoneal structure with a few streaks of connective tissue.

ACCIDENTAL LACERATION OF THE ŒSOPHAGUS [*By M. Caron*].—A mule presented at the morning inspection an œdematous swelling, warm, but not very painful, under the breast and extending back near the middle of the sternum. In the afternoon he discharges very freely from both nostrils. The next day he is in about the same condition, but exhales an infectious odor, his nostrils are covered with the discharge, his breath is fœtid, a small tumor has formed on the middle of the left jugular groove, the œdema of the breast has extended somewhat upwards, no appetite, excessive thirst. The following day the small tumor of the neck has increased. At a point where fluctuation was perceptible the mortified skin breaks and permits the escape of excessively fœtid gas. A puncture causes a flow of purulent serosity of a repulsive odor. No change for twelve hours, when at last at the bottom of the wound is observed an opening through the œsophagus, probably due to the deglutition of a sharp thorn concealed in the hay; this has pierced the œsophagus, permitted the introduction of food and liquids into the cellular tissue and into the muscles; then formation of the abscess, expulsion of the thorn (the cause of all the trouble), and then gradual return to health. During the whole disease the treatment was of an expectant nature, deodorizing and antiseptic; and also after, when the positive diagnosis had been made by the discovery of the lesion of the œsophagus.—(*Rec. de Med. Vet.*)

PICRIC ACID AS A DRESSING FOR WOUNDS [*By MM. Deysine and Vairon*].—These veterinarians have given picric acid a trial in the dressing of wounds and have obtained excellent results with it, which they consider as endowed with three principal qualities: antiseptic, stimulant of keratogenous action and analgesic. They have used a solution made of 10 grammes of picric acid, 50 grammes of alcohol at 65°, 1000 grammes of water. The alcohol facilitates the washing off of the yellow coloration which remains on the tissues or on the hands of the operator. They have obtained excellent and rapid success in the treatment of stickfasts of the back, of the withers or of the ribs. The wounds of the superior border of the neck were slower to heal, probably on account of the difficulty in adapting the pressure, but in the treatment of scratches at the fold of the coronet, or of burns, either of the sole of the foot or of the skin, the results were very satisfactory. The dressing is very simple; a small pad of sterilized cotton, dipped first in the solution and then squeezed out, is applied directly on the wound; a second pad is placed over it and completes the dressing, which is held in place by bandage, surcingle or any adhesive apparatus.—(*Rec. de Med. Vet.*)

CHRONIC AMAUROSIS AND TEMPORARY EPISTAXIS.—These are recorded by Mr. Loriot, in the *Recueil de Med. Vet.*, as complications that he has met with in a case of jaundice of the horse. This animal had presented all the symptoms of that disease, and as he began to recover was taken with an abundant epistaxis, which seemed to be the last evolution of the disease, as the animal soon appeared to be in perfect health, with the exception of the peculiarity of his movements, which were those of a blind horse. And blind he was. There was a well marked amaurosis of both eyes, which, notwithstanding a treatment well prescribed, remained permanent, and was still present several months after his attack of jaundice. This is certainly a complication worth noticing and deserving of record.

RUPTURE OF THE INTERNAL INSERTION OF THE CAP OF THE PERFORATUS AND LUXATION OF THE TENDON ON THE EXTERNAL FACE OF THE HOCK.—Lesions of this nature are rare, and but few have recorded them in veterinary journals. This case has, therefore, a great interest, and is related by Mr. Jobelot in the *Rec. de Med. Vet.* After a steeplechase run Quartier, a thoroughbred, is pulled up very lame on the right hind leg. The hock is very much swollen, the leg moves all in one piece, without flexion, the animal rests on his toe. Continued irrigation, then blistering gave some relief; by degrees the lameness diminished, and as the swelling seemed to remain, rest and douches repeated during the day were prescribed. A month later the animal was comparatively free from lameness, and as the inflammatory swelling had subsided, the following conditions were observed: "Above the os calcis, the cord of the hock is larger than normal and keeps enlarging until the cap at the os calcis. There this cap is half way deviated outwards; it is twice its ordinary size and forms a quite regularly oval, thick and indurated swelling. This deviation permits the tracing of the clean tendon of the gastrocnemius down to its insertion. The perforatus alone is thickened. To the left of the tendinous cap, the os calcis is much enlarged, with the fibrous cord of the displaced perforatus on its external face. Immediately below the cap of the perforatus, the tendon is clean and of ordinary size; but farther down, at the lower part of the hock, it is thick, tumefied, and globular. The deviations of the tendon exist as far as the lower third of the cannon and from the hock to that point the two tendons are traced side by side of each other. A little above the fetlock, the perforatus resumes its normal situation. Besides these principal lesions, there were other secondary ones: a large tendinous thoroughpin on each side of the cord of the hock and a synovial tumor, produced by the distension of the inferior *cul-de-sac* of the tarsal tendinous synovial. There is no capped hock, but a little below the head of the os calcis, there is a fourth synovial dilatation." Notwithstanding all these lesions and their serious nature, Quartier resumed his work after three months entirely free from lameness.

ENGLISH REVIEW.

CANINE PATHOLOGY.

HERNIA IN DOGS [*By W. Paner, M. R. C. V. S.*].—This interesting subject receives at the hands of the author three additional instances, which add much to the history of hernia. The first is that of a three months old pup, having a congenital *umbilical* hernia, which had become as large as a walnut. The treatment consisted in the application of a tampon of tow, held in position by strips of adhesive plaster. The little fellow was fed heavily; as he was a gluttonous eater, his abdomen was constantly more or less distended and by this the pressure of the tampon held the hernia in place. In six weeks the cure was radical. . . . The second is that of a bitch which had an *inguinal* hernia, so large that it trailed on the ground and interfered with the walking of the animal. The hernia was reduced, the skin carefully divided, and separated from the peritoneum. The serous sac was ligated close to the inguinal ring and cut off. A large piece of skin was removed and the incision closed tight by interrupted sutures. The recovery was complete in a month. . . . The third case was not so successful. A fox hound had been fighting and was badly bitten; he had a bad *abdominal* hernia forming a tumor as big as the fist.

While he was under the influence of chloroform, the skin was incised, exposing the abdominal walls torn and the abdominal contents were found forming the mass, black and surrounded by clotted blood. Portions of the peritoneum and omentum were excised, the peritoneal edges brought together with fine carbolized cat-gut sutures and afterwards the abdominal muscles, then the skin. On the outside boracic acid and iodoform, with gauze, kept the wound antiseptic. The patient was fed with essence of beef and did well at first, but towards the ninth day he showed signs of pneumonia, and died on the tenth. The lesions were those of infectious pneumonia. Under the skin the whole body was black and covered with numerous little abscesses. The wound of the operation was doing well.—(*Veterinary Record.*)

NEEDLE IN THE ŒSOPHAGUS OF A DOG.–It is well known that young dogs frequently suffer from the presence of foreign bodies in the œsophagus. Mr. A. H. Clapp has had occasion to remove from one of them a needle which he had swallowed and which had lodged in his throat, giving rise to bloody vomiting, inability to swallow and frequent attempts at deglutition. On the left side of the throat, a little below the jaw, a slight projection could be detected, which was painful on pressure. With the use of cocaine, an incision was made over the skin of the projecting part, and on feeling with the finger, a sharp projection was felt, which being cut upon proved to be a needle, which was extracted with a pair of forceps, drawing along several inches of cotton, tied with a large knot.—(*Veterinary Record.*)

TWO CASES OF ORCHITIS IN THE DOG.—In the *Veterinary Record* Mr. G. Mayal, M. R. C. V. S., records two cases of this affection, which is not common, taking into consideration the exposed position of these organs to blows or external violence. One of them had both testicles affected, the other only one. With both animals, though of variable degree, the symptoms were the same, viz.: Staggering gait, inability or disinclination to cock the leg when micturating, dragging of the hind legs, testicles swollen and painful to the touch. In one animal the temperature rose to 105°. The treatment consisted in laxatives, fomentations three or four times a day, and belladonna liniment, and between the fomentations bags of ice. Internally the animals received iodide of potassium and liquor arsenicalis. In the one which was less affected, instead of ice bags a liniment of aconite, chlorhydate of ammonia and nitrate of potassium was used externally. This last dog made a good recovery in a fortnight. The other lingered longer and finally was destroyed.

OVARIOTOMY AND VAGINAL TUMORS.—Referring to suggestions made by the author of several cases of vaginal tumors, recorded in the *Vet. Record*, viz.: the propriety of performing ovariotomy with sluts thus affected, Prof. Hobday of London rather endorses the idea and relates three cases where he had applied the treatment—that is, performing ovariotomy, and according to indications leaving the vaginal tumor alone or interfering with it by extirpation and curettage. In a first successful case, the uterine papilloma was removed and did not return. In a second the growth was left untouched; the animal had to be destroyed. In a third case the ulcerating papilloma was removed with a curette, had a slight tendency to return and was curetted a second time, since which the animal is well. Ovariotomy had been performed in all three. The indications of this are based upon the fact that during œstrum "the bitch is constantly rubbing her hind parts against various objects, the tumors (if present) are more vascular, receive injury and bleed freely; the offensive blood-stained discharge, too, is increased in amount and the tumor appears to grow more rapidly at these times. By ovariotomy the cause of this is removed."

ROUMANIAN REVIEW.

SOME RESEARCHES IN URETHANE.—This preparation (ethylic ether of carbamic acid) has been the object of experiments made by Dr. Dumibresku, who arrives at the following conclusions: (1) In dogs, and according to the dose given it produces hypnosis more or less profound and lasting; (2) it produces it also by intravenous injections; (3) the drug has no action on circulation, but lowers the temperature, reduces the respirations and stimulates urinary secretion; (4) it has no action on the pupil; (5) its action does not last long; (6) it does not give rise to any gastro-intestinal irritation in small doses, and in hypodermic injections gives rise to subcutaneous abscesses and irritates the digestive and respiratory mucous membranes; in veins, even concentrated solutions produce no bad effect; (7) the best way to administer it is per mouth, but when given in an intoxication by strychnia, subcutaneous or intravenous injections are better; (8) it is the most efficacious physiological antidote of strychnia; large doses will remove the toxic effects of a dose of strychnia, three times mortal. The doses are: as hypnotic, to large dogs, from 5 to 20 grammes, to small, 2.50 to 05 grammes; in strychnia poisoning, give subcutaneously; by the veins, 1 gramme. Urethane is indicated in nervous diseases characterized by great irritability and hyperexcitability.—(*Revista de Medic. Veter. Bukarest.*)

MUSCULAR ATROPHY AND ARTICULAR PAINS.—In the same review, Mr. Furtuna calls attention to the fact that muscular atrophies are often sequelæ of arthritis, having a rapid evolution, and that not uncommonly the attention is directed towards the joint, which is submitted to liniment, blisters, etc., with no benefit to the patient, while the condition of the muscles, the true cause of the lameness, is overlooked. And if soreness is sometimes detected around the joint, possibly the result of some slight sprain, these are due to the atony of the atrophied muscles, which permits of excessive articular motions, and hence to pulling and tearing of articular ligaments. Mr. Furtuna recommends always a careful attention to the muscular condition, and in case of atrophy recommends galvanic and faradic electricity, subcutaneous injections of arsenate of strychnia, and among some twenty cases he has treated he claims he has always obtained good results.

CORRESPONDENCE.

DOCKING HORSES FOR FASHION'S SAKE.

Editors American Veterinary Review:

I have read with satisfaction the editorial in your last issue condemning "the amputation of the horse's tail for fashion's sake." Some time ago, while connected with the Humane Society in Chicago, I was several times forced to take a public stand in this matter against some veterinarians, and presumably this is the reason why I am now accused of the authorship of this article. While I disclaim any connection with it whatever, yet I am heartily in sympathy with its general tenor and shall use this opportunity to set myself right upon this question.

The cause for the article was the report that the Lancashire (England) Veterinary Association passed a resolution declaring "the docking of horses as a necessary operation," and the reviewer justly and indignantly concludes "that such a resolution would never receive the endorsement of an American association." In this he is correct, because we have already recorded in the annals of the U. S. V. M. Association such a resolution declaring the docking of horses as an unnecessary operation. It was passed a few years ago at the Philadelphia meeting, and while the discussion on the subject was rather forcibly shortened, there was evidence of some very positive opinions, which should have had a more liberal hearing. Docking has not been stopped by this resolution, nor will it ever be stopped by any law or other proceeding than the honest refusal of veterinarians to further perform this operation.

It is generally believed that docking of horses is an English fashion. It is certain that, with the exception of France, where at times it was also practised quite extensively, it is practically unknown on the continent of Europe. In the large cities of Germany, Austria, Russia, countries which each produce excellent breeds of carriage and saddle-horses, one never sees a docked horse except in steeple-chases, where the imported English or Irish hunter figures prominently beside the domestic jumper who invariably wears a banged tail. In America the fashion was slow to get a foothold, but once introduced was likely to be overdone. Even in England only certain classes of horses are docked, hunters, park-hacks and coachers, many of them remaining the caressed property of their wealthy owners until death by old age. But in America many thousands of horses are now annually docked, of whom only comparatively few are fit for the above purposes. Yet they are "fixed up for the trade" by being docked, and having their bushy manes and fetlocks thinned and trimmed. By chance or from ignorance of buyers many of these horses sell for carriage horses or as "English walk-trot-canter" saddlers. After a period of trial they prove their unfitness, and, partly or totally ruined, are sold in disgust by their duped owners. Then we recognize these horses again on delivery wagons, depot-hacks, peddlers' wagons, or at other employments which do not allow that care which a docked horse should receive.

For us as veterinarians it would be unseemly to fall into sentimental clamors as is done by professional humanitarians, but as the operation of docking is mostly performed by veterinary practitioners it is one of our duties to calmly investigate the question from the scientific and ethic standpoints.

"Doctors disagree," and veterinarians do not always agree. Of course, we want different opinions, for through them we approach truth the nearest. A prominent veterinarian of Chicago bluntly confesses that "*he believes the operation of* *docking to be justified because it increases the value of the horse.*" Surely a most remarkable theory! But this belief is natural to him, he is a veterinary materialist, a utilitarian who thinks not that the horse is endowed with the same organs of life that were given to him; he regards the horse as an automaton, an article of commerce, a commodity exchangeable for money. But withal I respect this man for the originality of his thought and the straightforwardness of his words. Other veterinarians, however, will admit that docking is cruel, that it is an ugly fashion, that it is an unlawful operation. Yet they argue that they must comply to the demand of their clients, and thus they operate—behind closed doors. Shame to these cowardly heroes who in the slavish subjugation to the dollar outrage their manliness and righteousness. It is absurd to maintain that we cannot refuse this operation, for I know of colleagues that have done so time and again without derogatory results to their "business." Even to persons who have only a commercial conception of our profession, the law alone grants sufficient cause for refusal, for no man is expected to perpetrate an unlawful act.

I will not enter to-day into details of the scientific aspect of docking. Whether the operation in itself is cruel or not may be decided differently by courts; the main issue remains that it is cruel in its effects. It has also been argued that the skin of the horse is supplied with particular muscles to ward off insects. This is only partly true, for no veterinary anatomist has as yet detected them on the hindquarters, and a docked tail is too short to switch over this region. This proposition would rather favor the banged tail and should meet the objection of those who consider a long tail a "nuisance." Others have classified docking with the "economic" operations like castration and dehorning, but as its effect is not beneficial but deleterious it cannot be economic. Look at it in whatever light you want the fact remains that docking is an unnecessary operation, and as it is cruel besides it has been made unlawful with perfect propriety.

From all these reasons I maintain that it is a breach of ethics to perform this operation. The statutes of our veterinary associations are full of a lot of things that we shall not do—towards our fellow practitioners. Yet this is only the teaching of ethical conduct towards ourselves. But there is also an ethical conduct towards our animal patients; in fact, there exists what may be called "ethics of *veterinary* work." The ideal aim of veterinary medicine is to restore to health diseased animals, to relieve suffering, to lessen pain, and to shorten agony. This is just as beneficent a mission as that of human medicine. When we undertake to perform an operation that unnecessarily produces pain, or entails prolonged suffering, we act in offense of the objects of our humane work and defraud our science of its true and ethical destination. The above premises granted as correct —and they cannot be proven as wrong—no objection can be raised to the conclusion that a veterinarian who cuts off a horse's tail for fashion's sake may be cited before his association upon a breach of ethics. If nothing else, I hope to show by this argument how mean an act "docking" really is, in the light of a little straight thinking and honest reflection.

In regard to the expression of opinion by our English cousins, if it can be taken as the prevailing sentiment, it indicates a degeneration of professional morality. It has not always been that way in England. Queen Victoria herself has never allowed a docked horse in her carriages or in her stables, and there are many noble-minded Britons who have followed her example. But, above all, it seems difficult to perceive how such rough opinion could spring from the land of George Fleming, this honorable veterinarian, this sympathetic writer, whose teachings are impregnated with the deepest and purest humanity towards the horse. OLOF SCHWARZKOPF.

SOCIETY MEETINGS.

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

The thirty-fourth annual meeting of this association convened in the assembly room of the Tulane Hotel, Nashville, Tenn., on Tuesday, September 7th, at 10 A. M., with President Frederick H. Osgood in the chair, who introduced Rev. Dr. W. T. Haggard, who, on behalf of the Mayor of the city, welcomed the veterinarians in a neat and hearty speech, after which Hon. John J. McCann very cordially and wittily bid the members welcome in the name of the Governor of Tennessee and the President of the Centennial Exposition. He also announced that he would take the attending ladies in charge, and convey them through the Exposition, which was accomplished to their infinite delight, the expedition including a sumptuous luncheon at the Casino, in the Fair Grounds.

Prof. Leonard Pearson responded on behalf of the association in that happy strain which is his own, bringing out in the course of his remarks some very convincing arguments in favor of the extension of veterinary medicine in the Southern country.

President Osgood then delivered his annual address, which was listened to with marked attention, as it contained many suggestions looking toward the interests, extending the usefulness, and bringing the association closer to the hearts of its members. He commended the custom in the association of having the President's address delivered at the session following election, as any extemporaneous remarks made at the moment of the announcement of the balloting and in the excitement which such occasions produce, cannot be of the value and interest possessed by those which are the subject of earnest deliberation and assiduous study of the needs of the profession and its general welfare. He drew the attention of members to the dangers to the membership numerically on account of the inability of many to be present at the annual conventions, and their non-participation in the affairs of the association, which was calculated to cause them to lose interest in its deliberations. He thought that every member in good standing should have a voice in its affairs—especially a vote in the election of officers. He proposed that a nominating committee should place a number of candidates in the field and every member have the right to vote by mail for his choice. The selection would then be the voice of the entire membership and not of the comparatively few who are able to be present. It would stimulate interest, it would make each man feel that he had a voice in the management of the affairs of the association. He dwelt at length upon the difficulty that was being experienced in collecting the annual dues, believing that the chief obstacles lie in the extreme financial depression of the average veterinarian, who has been and is bearing his proportion of the general lassitude of business, and the fact that the annual dues are too exorbitant. It was shown by the records that more money could be collected where the dues are $3.00 than if $5.00, and the burden upon the members would be considerably lightened, while it would bring beneath its influence a much larger proportion of the veterinarians of the country. The chief expenditures of the association are for printing the "Proceedings," and the salary and expenses of the Secretary, and it was clearly shown that the amount secured at the reduced figure would be quite sufficient for all purposes—the estimate of expenses has been about $1150 per year. He touched upon the suggestion to change the name of the association to the "American Veterinary Medical Association," or other name which will permit its membership to include all the countries of North America. The subject of reciprocity between State Boards of Veterinary Medical Examiners was considered at length and heartly endorsed, which added considerable stimulus to its discussion before the Faculties, and an informal meeting of members of such boards was held in the evening. Cognizance of the appropriation of money by certain States for the investigation of animal diseases was taken, and the extension of such acts commended in every State. The Bureau of Animal Industry, and the State Experiment Stations received commendable allusion. The address concluded with a conservative *résumé* of the status of the profession throughout the country, the reasons which have depressed it, and the hopes and causes of its revival.

The calling of the roll was dispensed with and the attendance determined by circulating lists each day for the signatures of those present. From these lists the following members were found to be present at the various sessions:

E. B. Ackerman, Brooklyn, N. Y.; A. H. Baker, Chicago, Ill.; Roscoe R. Bell, Brooklyn, N. Y.; Robert H. Bird, Helena, Mont.; Tait S. Butler, Starkville, Miss.; C. A. Cary, Auburn, Ala.; A. W. Clement, Baltimore, Md.; J.W. Connoway, Columbia, Mo.; T. Bent Cotton, Mount Vernon, O.; W. H. Dalrymple, Baton Rouge, La.; Charles Ellis, St. Louis, Mo.; H. D. Gill, New York, N. Y.; J. O. Greeson, Kokomo, Md.; T. D. Hinebauch, Fargo, N. D.; Nelson P. Hinkley, Buffalo, N. Y.; W. H. Hoskins, Philadelphia, Pa.; William Henry Kelly, Albany, N.Y.; James Law, Ithaca, N. Y.; William Herbert Lowe, Paterson, N. J.; H. M. McKillip, Chicago, Ill.; J. C. Meyer, Jr., Cincinnati, O.; S. B. Nelson, Pullman, Wash.; E. P. Niles, Blacksburg, Va.; W. B. Niles, Ames, Ia.; F. H. Osgood, Boston, Mass.; John M. Parker, Boston, Mass.; T. A. Peters, Lincoln, Neb.; Leonard Pearson, Philadelphia, Pa.; T. B. Pote, Terre Haute, Ind.; W. C. Rayen, Nashville, Tenn.; J. B. Rayner, Westchester, Pa.; T. B. Rayner, Chestnut Hill, Pa.; D. E. Salmon, Washington, D. C.; J. W. Schiebler, Memphis, Tenn.; F. S. Schoenleber, Chicago, Ill.; E. H. Shepard, Cleveland, O.; M. Stalker, Ames, Ia.; S. Stewart, Kansas City, Kan.; A. S. Wheeler, Biltmore, N. C.; T. E. White, Columbia, Mo.; W. L. Williams, Ithaca, N. Y.; J. F. Winchester, Lawrence, Mass.; A. W. Bitting, Lafayette, Ind.; George B. Blackman, Rome, Ga.; S. H. Caldwell, Montgomery, Ala.; R. H. Drummond, Birmingham, Ala.; F. T. Eiseman, Louisville, Ky.; H. D. Fenimore, Knoxville, Tenn.; T. A. Geddes, Ames, Ia.; J. M. Good, Chattanooga, Tenn.; C. W. Heitzman, New Orleans, La.; J. R. Mitchell, Evansville, Ind.; Maurice O'Connell, Holyoke, Mass.; Joseph Plaskett, Nashville, Tenn.; E. M. Ranck, Philadelphia, Pa.; J. C. Robert, Agricultural College, Miss.; G. R. White, Chapel Hill, Tenn.; J. W. Jamieson, Paris, Ky.; M. Francis, Texas.

There were also present as delegates from the Pennsylvania State Veterinary Medical Association, Drs. J. C. Foelker and N. Rechtenwald.

Other members of the profession present were: J. C. Blankton, Farmville, Va.; G. D. Bray, Columbia, Tenn.; R. E. Collins, Memphis, Tenn.; T. H. Hagyard, Nashville, Tenn.; S. E. Jago, Shelbyville, Tenn.; R. J. Michener, Lebanon, O.; J. P. Rauch, Memphis, Tenn.; C. Barnwell Robinson, Washington, D. C.; F. S. Roop, Blacksburg, Va.; T. W. Scott, Nashville, Tenn.; D. K. Smith, Toronto, Can.; Francis Abele, Jr., Quincy, Mass.

Among the visitors were Gen. B. F. Cockrill, Nashville, Tenn.; L. E. Morgan, M. D., Baton Rouge, La.; M. Browning, Boston, Mass.; J. D. Plunkett, M. D., Nashville, Tenn.; Ferdinand Smith, Chicago, Ill.; Frederic Krey, New York, N. Y.; Harold Sorby, Chicago, Ill.; J. E. Aldrick, Memphis, Tenn.

The following ladies were present: Mesdames F. S. Schoenleber, R. R. Bell, H. D. Gill, F. H. Osgood, W. H. Hoskins, J. R. Hart, E. H. Shepard, N. P. Hinkley, W. C. Rayen, A. H. Baker, T. B. Cotton, C. B. Robinson, M. H. McKillip, and Misses McKillip, Rechtenwald, and Wills.

The reading of the minutes was dispensed with and they were approved as printed in the "Proceedings" of 1896.

The following applications for membership were reported favorably by the Executive Committee, and they were elected: Ira K. Atherton, V. S., Marshalltown, Ia.; D. P. Frame, M. D. C., Colorado Springs, Col.; S. Houston Caldwell, M. D. V., Montgomery, Ala.; P. J. Cronon, M. D. V., Montgomery, Ala.; R. H. Drummond, M. D. C., Birmingham, Ala.; M. Francis, D. V. M., College Station, Tex.; Joseph M. Good, B. Sc., V. S., Chattanooga, Tenn.; Chas. W. Heitzman, M. D. C., New Orleans, La.; David King, V. S., Natchez, Miss.; Geo. N. Kinnell, M. R. C. V. S., Pittsfield, Mass.; J. C. Norton, D. V. M., Phoenix, Ariz.; Joseph Plaskett, D. V. S., Nashville, Tenn.; J. C. Robert, V. M. D., Agricultural College, Miss.; Edward M. Ranck, V. M. D., Philadelphia, Pa.; Geo. R.

White, D. V. S., Chapel Hill, Tenn.; Geo. B. Blackman, D. V. S., Rome, Ga.; Maurice O'Connell, D. V. S., Holyoke, Mass.; A. Gibson, D. V. S., Birmingham, Ala.; T. A. Geddes, D. V. M., Ames, Ia.; H. D. Fenimore, D. V. S., Knoxville, Tenn.

Dr. W. Horace Hoskins, Chairman of the Finance Committee, made a lengthy report, covering the period since 1894, and showing a balance in the treasury at the beginning of this session of $547.02.

Secretary Stewart began the reading of his report by detailing the arduous work of the position which he holds. He brought out the necessity of a safe storage for the records, etc., of the association, and said that an offer had been received from Prof. James Law, tendering such accommodations at Cornell University, and later in the proceedings the offer was accepted and Prof. W. L. Williams was chosen custodian of the property. The Secretary gave a statement of the poor results he had obtained in endeavoring to collect the delinquent dues of those dropped from the roll through the medium of a collecting agency, and thought that more money would be received by his own efforts from those who might wish reinstatement than by such methods as these agencies employ. He recommended a reduction of the dues to $3 per annum. His report showed that the cash on hand at the beginning of the year and receipts from various sources amounted to $1777.26, and that the disbursements had been $945.04, leaving a balance on hand up to September 7, 1897, of $832.22. There was owing the association $4660.04, some of which was good, but a large amount of it would never be collected. He estimated the expenses of the association for the coming year at $935, and upon this basis advised reduction in dues.

Chairman Williams, of the Publication Committee, presented a lengthy report, showing that the committee had been laboring hard to reduce the cost of printing the "Proceedings" and expedite the publication. The estimate for this year is $1.03 per page, against $1.33 last year, and is to be ready for delivery in forty-five days after the close of the meeting, against four months last year.

Chairman Gill, of the Committee on Intelligence and Education, reported that there are seventeen veterinary schools in America, all having a three-year course with the exception of three. The Ontario Veterinary College has informed the Chairman that it would next session advance its course to three years. Salient points in the report were recognition of the increased intelligence of graduates as shown by their ability to pass civil service examinations; the appointments of Profs. Pearson and Grange to deanships; the State Universities versus the private schools; there are twenty-seven agricultural colleges (their graduates should have allowance of one year when entering veterinary colleges); experiment station workers commended; new publications of the Bureau of Animal Industry works of great value; every office of Bureau now in classified list except that of the Chief; the Secretary of Agriculture praises the better work of its employés since the adoption of civil service; regrets the political appointments of quacks in Illinois, Michigan, and Nashville; praises the recent appropriation by Pennsylvania to investigate animal diseases. A long report on journalism was read from Dr. W. H. Dalrymple, member of the committee, praising the excellent work which the journals are doing, showing how inadequate text-books are in the vitascopic rapidity with which new discoveries are being placed before the profession; how the journals reinforce and modernize the text-books and keep the veterinarian abreast of the times; how those who fail to read them must fall behind those who do, and advising all to subscribe to as many as possible. He was surprised to learn that less than one-third of the members of the profession in this country read the journals published here, which he considers very excellent ones, and made a very strong plea for an awakening of interest in them, both financially and by contributing to their literary values.

The Secretary read the report of Chairman Theobald Smith, of the Committee on Diseases, who recommended the abolition of the Committee as it was a dead letter. The literature furnished by the Department of Agriculture, the Bureau of Animal Industry, and the journals is deemed far superior to any reports that this committee has ever made. In lieu of the present methods he recommended that some one of the infectious diseases be selected and have the various members investigate and report upon it.

The reports of the various State Secretaries were read by title, and will be printed in the "Proceedings."

It was resolved to distribute the large number of not used copies of the proceedings for different years among libraries, boards of health, and other sources calculated to benefit the profession by the dissemination of a knowledge of its deliberations.

The following resolution committees were appointed: On the death of Jno. R. Hart, Drs. Pearson and Rayner; on the death of Charles F. Douglass, Drs. Bell and Ackerman; on the death of O. H. Flagg, Drs. Law and Rayner.

The question of a reduction of the dues was, by motion, referred to the Executive Committee, which later gave notice in writing to the association of a change in the constitution to accomplish this, which cannot be acted upon until the next session.

After adjournment for lunch the section of State Medicines was assigned the afternoon, and the first subject introduced was a paper on "The Action Experimentally of Tuberculin on Healthy Cattle," by Dr. T. D. Hinebauch, of North Dakota.

The discussion of tuberculosis, under a variety of phases, was then taken up, and Dr. J. M. Parker, Secretary of the Massachusetts Cattle Commission, read a lengthy and very interesting paper on the "Results Attained and Attainable by State Control,* and was followed by one by Prof. E. P. Niles, of Virginia. Dr. Leonard Pearson, of Pennsylvania, was the next speaker, and gave a very interesting epitome of the subject.

Dr. A. W. Clement, of Maryland, followed as one of the assigned speakers, and Dr. Salmon then indulged in very interesting remarks, after which the discussion became general, being participated in by Drs. Cary, Law, Baker, Lowe, Gill, Stalker, and others.

On reassembling on Wednesday morning, at 9 o'clock, the report of the Executive Committee was received and approved, after which the election of officers for the ensuing year was taken up. For President, Dr. Cary, in a neat speech of laudation, placed Dr. Salmon in nomination, while Dr. Osgood's name was presented by Dr. Lowe, who said he had made an admirable presiding officer, and, as he had made many important suggestions in his annual address, he should have the opportunity to put them into effect. Dr. Gill seconded Dr. Osgood's nomination, and thought precedent established his right to reëlection. Dr. Williams seconded the nomination of Dr. Salmon, and called attention to the fact that other Presidents had been given but one term. Dr. Hoskins spoke heartily for Dr. Osgood, after which ballots were distributed by the tellers, which on being counted showed that Dr. Salmon had received 29 and Dr. Osgood 23. President Osgood declared that there was no gentleman whose election he would rather announce than the distinguished chief of the Bureau of Animal Industry.

---

* Printed elsewhere in this issue.

Dr. Thomas B. Rayner was nominated by Dr. Hinkley for Eastern Vice-President, which was seconded by Dr. Peters, and nominations were closed.

Dr. W. C. Rayen, of Nashville, was placed in nomination for Central Vice-President by Dr. Bell, and Dr. A. T. Peters, of Nebraska, was nominated for Western Vice-President by Dr. Butler. The Secretary was instructed to cast a ballot for the three Vice-Presidents, which was done.

Nominations for Treasurer being in order, the name of James L. Robertson, the incumbent for the past fifteen years, was shouted from various quarters, but Dr. Hoskins explained that that gentleman earnestly desired to be relieved of the duties, and while he should be glad to vote for him, he thought it was unfair to insist upon throwing the burdens of the office upon Dr. Robertson year after year in the face of his annual protests. Dr. Butler nominated Dr. Williams, but he declined as he is already burdened with offices requiring much of his time, and a new office has been voted him at this session. Dr. Pearson nominated Wm. Herbert Lowe, and he was elected.

For Secretary, the name of the present admirable incumbent, Dr. Stewart, was simultaneously shouted by almost every member present, and he was instructed to cast one ballot for himself.

The officers of the association for 1897–98, therefore, stand as follows:

President—Dr. D. E. Salmon, of Washington, D. C.

Eastern Vice-President—Dr. Thomas B. Rayner, of Pennsylvania.

Central Vice-President—Dr. W. C. Rayen, of Tennessee.

Western Vice-President—Dr. A. T. Peters, of Nebraska.

Treasurer—Dr. Wm. Herbert Lowe, of New Jersey.

Secretary—Dr. S. Stewart, of Kansas.

Custodian of Records—Dr. W. L. Williams, of New York.

Dr. Pearson then read a carefully-prepared paper entitled "A Review of the Field of Veterinary Science," which elicited no discussion.

Dr. Charles Ellis, of Missouri, read his paper on "Our Milk Supply," which was discussed by Drs. O'Connell, Parker, and Ellis.

Then Dr. Dalrymple came forward with "The Veterinary Field in the South," which was a masterful portrayal of the difficulties encountered in that new veterinary country, but showing that the barriers are being rapidly broken down and that profitable and congenial practices were being established by many educated veterinarians. The discussion, which was of the most liberal and diversified character, from the reputed malarial infection of the country (denied by all) and the social equality of all good citizens, to a consideration of the diseases encountered, was indulged in by Drs. Butler, Cotton, Heitzman, O'Connell, B. F. Cockrill (the famous breeder of thoroughbreds), Wheeler, and Plunkett (ex-President of the State Board of Health).

Dr. C. A. Cary, of Alabama, then brought forth a paper which riveted the attention of all in the audience, upon the subject of "Osteo-porosis," illustrating his study of the pathological processes by a generous collection of specimens, showing different portions of the osseous system affected, and a deposit of compact tissue in those cases of apparent recovery. He would read from his paper, and then take up the specimens and describe the processes as he had studied them. He claimed that the diagnosis of the disease was often an error, the condition being that of pus in the sinuses, caries of teeth, etc., and yet if we remember that the enlargements of osteo-porosis are always symmetrical an error need never be made; it is totally dissimilar to osteo-malacia, but believes it identical to the "bran disease" of the Germans. Treatment was thoroughly considered, and altogether it was very instructive and more original in reasoning than is usually contained in such contributions. Immediately upon its completion questions were plied from all quarters, and when this line of discussion was finished many gave forth their theories as to its cause, each citing cases upon which his conclusions were based. The interesting discussion was taken part in by Drs. Baker, Wheeler, Fenimore, Bell, Rechtenwald, Hoskins, O'Connell, White, Mitchell, Gill, and Gen. Cockrill.

At the request of many members the question of holding the banquet on the second evening of the session, instead of the last, was brought up, showing that by doing so members could catch trains and reach home much earlier than if they remained for the supper on the last evening, and, as a matter of fact, many would forego the banquet in order to abridge their absence from home. It was, therefore, voted to change the date of the banquet to Wednesday night, and the success of the venture in this instance—resulting in a large attendance, and enabling members to save from ten to twenty hours—will almost ensure making this the rule in the future.

The convention now adjourned to accept the hospitality of the Entertainment Committee, who had three special cars at the depot at 3 P. M. to convey the guests to the far-famed Belle Meade Stock Farm, about seven miles distant from the city, where they roamed through the spacious and model grounds and barns, viewing the premises and the stock. Under the guidance of General Cockrill, to whom pedigree and points are as A, B, C, the entire party of ladies and gentlemen were taken to the stall of each famous stallion, who occupies a twenty-foot stable, surrounded by an acre paddock. The stud-groom would lead out the occupant, the guests would view his beautiful outlines, and possibly criticise some acquired unsoundness obtained in the struggles which gave him fame and entitled him to be placed among the galaxy of notables at Belle Meade; General Cockrill would give his pedigree with all regard for details, and then the groom, "Sam," would go over his achievements, either in poetry or some drollery, which has made him also famous. First was Inspector B., the famous Dwyer race-horse; then Luke Blackburn, now twenty years old, but as playful as a two-year-old; then the world-famed Iroquois, the only American horse than ever won the English Derby, followed by imported Loyalist and Clarendon, while all were anxious to be shown that wonderful old blind sire of great ones, Great Tom, twenty-four years old, and blind from periodic ophthalmia for seventeen years, but without transmitting that defect to any of his get. Upon his sides are the unsightly scars from severe blisters when suffering from pneumonia as a four-year-old, necessitating his retirement from the turf, and now, after twenty years, still raw in summer time from irritation. These marks were left by our English cousins, and are simply reminders of the therapy of a past age. With ringbones, capped hocks, bursal enlargements, sightless sockets and revolting sides, he came out of his stall at a trot, and when the inspection was over galloped around his paddock as though he still enjoyed the delightful home furnished by his kind master in the evening of his useful life. The large herd of Jerseys were inspected during the milking hour, after which the guests assembled in a fantastic group upon the steps and veranda of the colonial homestead, where photographs were taken of the interesting spectacle, and from a half-finished copy shown the next day it is a splendid specimen of photographic art, each face being as distinct as if its possessor were sitting for a portrait. Major McCann, who had by this time come to be regarded as "everybody's friend," was seen kneeling in front of an evergreen in the foreground, with a little child on either side. From here the guests reëntered the cars, awaiting them at the entrance to the grounds, and steamed back to the city, all happy in what they had seen and enjoyed, but tired and hot from walking under the intense rays of the southern sun.

Although the banquet was announced for 8.30, it was half past nine before the band announced that the repast was complete, owing to the change of date; and a well-decorated table running from one end to the other of the immense dining-hall, was soon surrounded by the largest number of veterinarians that ever sat at a banquet-table in America. When cigars were passed around, Toastmaster Hoskins, whose verbosity and versatility in that function are famous wherever veterinary repasts are indulged in, started the ball in motion, and from Professor Law to the Major's poetic stories there was not a dull moment.

When the morning of the third day arrived the members were promptly on hand, ready to listen to and discuss the balance of the papers to be read, just as though they had not been wining and dining the night before.

On assembling at 10 o'clock A. M. of the third day, after the transaction of some routine business, the association did a very becoming act in accepting the resignation of Dr. Theobald Smith as an active member, and, under suspension of the rules, electing him to honorary membership. Probably no man in the United States has done more to elevate our calling by adding to our knowledge of bacteriological subjects by original investigations than has Professor Smith.

The recommendation of the Executive Committee that all members who are delinquents for more than two years be suspended was carried, as was also their recommendation to drop all from the roll who had failed to qualify. It was also voted to give an extension of one year to all members two years in arrears, during which time they can pay their dues without accruing any other dues in the interim, and can, on application to the Secretary and payment of dues to date, become reinstated without further consideration by the Executive Committee.

Dr. John W. Connoway, of Missouri, then presented an exhaustive paper, covering the experiments of himself and colleagues with Texas fever, with numerous specimens of ticks, giving many details of their life history. Their experiments have been directed toward disinfecting southern cattle, so that they could be safely sent to the northern feeders without spreading the disease among northern cattle. Their experiments had clearly demonstrated the fact that the tick is the only agent active in disseminating the disease—a fact which had been denied by some investigators and especially by the laity. He explained at length the coöperative work between himself and Dr. Francis, of the Texas Experiment Station, looking to the efficacy of dipping cattle in mineral oil for the destruction of ticks, and the better results obtained by double dipping, finally recommending three dippings—one upon the infected range, one at the quarantine line, and one at the termination of the journey, this method promising to be a solution of the difficult problem. Another phase of the subject was considered in the inoculation of imported animals (those brought from the north to the south) to prevent their acquiring the fever. While this had been experimented with thus far it had not proven satisfactory. Dr. Connoway came within the twenty-minute rule, and, although he was voted an additional ten minutes, had to curtail his " talk " before he had completed his subject. The discussion which followed was participated in by Drs. Parker, Niles, Francis, Robert, Salmon, Law, and Wheeler.

After luncheon, Dr. E. P. Niles read a paper entitled "Veterinary Education and Medical Colleges," which brought forth a mild discussion by Drs. Gill and Hinebauch.

Dr. T. D. Hinebauch, of North Dakota, brought up the subject of "Millet Feeding," showing that the disease which he has described as "millet disease" is distinctively different from "osteo-porosis," though many have confounded the two on account of some symptoms and post-mortem lesions being similar. The disease exists in Nebraska, Kansas, South Dakota, Illinois, Pennsylvania, Wisconsin, and Minnesota. An examination of millet experimentally has produced the same symptoms in the animals experimented upon as in the victims of the disease to which he referred. The discussion following was indulged in by Drs. Cary, Williams, and others.

Dr. W. L. Williams, of Ithaca, N. Y., then read a most original paper entitled "Inhalation Pneumonia," which was so novel in its therapy as to disarm discussion beyond the point of interrogation. The REVIEW will publish it next month.

Following this, Dr. A. W. Clement, of Maryland, presented the subject of "Rabies," and the evidence deduced from reliable sources effectually combatted the tendency among a few gentlemen to discredit the existence of such a disease. His paper was very interesting and valuable, and its discussion by Dr.

Salmon brought out additional facts and suggestions of great importance; other speakers were Drs. Gill, Cotton, Ellis, Parker, Dalrymple, Hoskins, Plunkett, Meyer, Pearson, and Law.

At the close of the discussion on rabies, the Committee on Resolution reported as follows:

WHEREAS, The character of the milk supply of a city is of the greatest importance to the health of the public, and a contaminated milk supply is often followed by widespread suffering and numerous fatalities, and

WHEREAS, The wholesomeness of the milk supply is of equal importance with that of the water supply, for the improvement of which such intense efforts are frequently made, and

WHEREAS, Milk is contaminated in a great variety of ways, some of them so obscure that they are frequently overlooked, and require expert knowledge for their detection, and the usual city inspection, consisting merely in the detection of added water, is entirely insufficient for the proper protection of the public, and an inspection is required that includes the observation and the correction of defects of all phases and stages of the operation of milk production and distribution, be it

Resolved, That a thorough veterinary system of dairy inspection is hereby recommended to all boards of health, with the belief that it will exert an important influence for the protection of public health, the preservation of infant life, and the betterment of the diet of the people through the increased consumption of safe and wholesome dairy products.

WHEREAS, The tuberculin test has been proven to be the only reliable ante-mortem means yet discovered of determining the existence of tuberculosis in its obscure forms, and

WHEREAS, The repetition of this test on the same subject tends to lessen the characteristic reaction, thus producing a non-responsive condition of the animal which may be mistaken for soundness, and

WHEREAS, These facts may be, and are taken advantage of by the irresponsible and unscrupulous to aid in the disposition of diseased animals, be it

Resolved, That the private employment of this test except as supervised by competent and responsible persons, is fraught with danger to the public.

WHEREAS, This the thirty-fourth annual convention of the U. S. V. M. A., now closing its sessions in Nashville, has received every courtesy and assistance from the local Committee of Arrangements, the veterinarians of Tennessee, the citizens of Nashville, the Nashville and Chattanooga Railroad, and the authorities of the Tennessee Centennial Exposition, through their representative, Hon. John J. McCann, and

WHEREAS, This generous and hearty reception has greatly facilitated our work, and has made our visit enjoyable and profitable to an exceptional degree, be it

Resolved, That the thanks of this association are hereby tendered the veterinarians of Tennessee and the South, and to the citizens of this beautiful city for the hospitality we have enjoyed; to the press of Nashville for their full and accurate accounts of our proceedings, and to Hon. John J. McCann, for his untiring efforts that have so largely contributed to our comfort and entertainment.

WHEREAS, The sale of cattle for breeding purposes furnishes abundant and frequent opportunities for the dissemination of tuberculosis to uninfected herds, be it

Resolved, That all cattle sold for such purpose, should, before going to their destination, have the tuberculin test applied, and a certificate in accordance with the facts, furnished by the proper sanitary officer of the State, be it

Resolved, That the Committee on Diseases is hereby instructed to devote special attention to the subjects of osteo-porosis and rabies especially to the distribution, prevalence and losses caused by these diseases, and to report upon the same at the next annual meeting.

WHEREAS, Rabies of dogs and other domestic animals prevails in certain sections of the United States,

Resolved, That the sanitary authorities of the various localities should take action, looking to the control of dogs for the prevention of the disease.

WHEREAS, The growth and expansion of the civil service on the merit system of appointment has received our official approval from time to time, and

WHEREAS, Its continuance has demonstrated the wisdom and value of this method of selection for the public service, and has secured the best corps of workers the public has ever had in its employ, be it

Resolved, That we most earnestly urge its continuance, its higher development and further extension, and that we pledge our united support to our National, State and municipal officials who are charged with its execution and maintenance.

WHEREAS, The small slaughter-houses in country districts, as well as in cities, are difficult of proper inspection and supervision as they are so widely separated and are operated irregularly, and

WHEREAS, Unscrupulous parties take advantage of this fact, to have animals in a diseased and unsound condition slaughtered for food at such places, thereby menacing the public health, therefore, be it

Resolved, That the United States Veterinary Medical Association recommends the prohibition of small and widely scattered abattoirs, and the establishment of central slaughter-houses with municipal ownership, if practicable, where constant and rigid supervision may be enforced.

After some discussion, and an amendment to the rabies resolution, they were adopted.

The Secretary then read the titles of the following papers, the authors of which were not present: "Bacteriology," by Dr. George N. Kinnell; "Malignant Catarrh of the Ox," by Dr. A. Youngberg; "The Use of the Actual Cautery," by Dr. William Dougherty. These were ordered printed with the regular proceedings.

In discussing the recommendations for the next place of meeting, Dr. Parker advocated Boston; Dr. Peters, Omaha; St. Louis was very cordially placed in nomination, as was also New York City.

The retiring President, in a neat speech, thanked the members and visitors for their close attention and adherence to rules, which had assisted so much in making the meeting such a success in the great amount of work which had been accomplished, and introduced his successor, Dr. Salmon, who spoke briefly, thanking the members for the great honor they had conferred upon him, and soliciting their coöperation for the coming year. Following these addresses, the new Vice-Presidents, Secretary and Treasurer were presented to the association and accepted their positions in a few well-chosen words.

Adjournment for one year then followed, and it was the opinion of all whom the writer interrogated that no preceding session exceeded in interest, value, and attendance the convention of 1897.

NOTES OF U. S. V. M. A. MEETING.

FREDERIC KREY, representing the well-known veterinary instrument house of John Reynders & Co., of New York, had a fine display in the lobby of the Tulane Hotel, and his tables were the scene of much interest to the members, who examined the many recently improved and invented instruments, making all kinds of comments and inquiries. No other house sent a representative.

Everything was hot at Nashville—even the weather.

They were there from Nebraska to Alabama, and from Texas to Canada.

There was quite a change in sentiment toward tuberculosis as compared with the Buffalo meeting, and it was Dr. Clement's turn to smile.

A recent correspondent of the *Journal*, ridiculing the existence of genuine rabies, was sat upon by the Resolutions Committee.

Reduction in annual dues and more members was the slogan, and if the one shall produce the other, all should be happy.

"Let every member have a vote for the officers, whether he can attend the meetings or not," says ex-President Osgood.

The gray locks of the new President are very becoming.

The Dean of the United States College of Veterinary Surgeons waxed very forceful before the Faculties.

The movement to unite the Faculties and the Examining Boards has taken definite form in that a written notice of change of by-laws has been filed.

Quite a delegation stopped over at Chattanooga, visiting Lookout Mountain, with a drive through her beautiful parks; others spent a day or two at Asheville, and through the courtesy of Dr. Wheeler, of Biltmore, were shown through the wonderful Vanderbilt estate, while a few others visited Mammoth Cave in Kentucky.

Major McCann would be a drawing card for any city bidding for the veterinary convention.

The newspapers of Nashville gave long accounts of each day's proceedings and the *Banner* published the portraits of many. We noticed the familiar faces of President Osgood, Vice-President Bell, Secretary Stewart, Vice-President-elect Thomas B. Rayner, his brother, James B. Rayner, Doctors Hoskins, Gill, Williams, Ackerman, Pearson, Foelker, Hinkley and Cary.

Two faces greatly missed at Nashville were those of James L. Robertson and William Dougherty.

Osteo-porosis seems to be a very attractive subject to veterinarians of all stamps; as its discussion was the most general of the meeting.

The attendance of ladies far exceeded all previous years, and there was some talk of organizing a society composed of the wives of members.

The exposition was a source of great pleasure and much profit to the members, and the diversity of its attractions appealed to all tastes, from the streets of Cairo to the Museum of Art.

The new Treasurer, Wm. Herbert Lowe, is very proud of his new office, and is prepared to give bonds in any amount.

The association made overtures to the experiment station workers, and tried to secure their amalgamation as a section of the parent organization; but while they expressed the most filial regard for her, they preferred to remain as a separate body for the present, but their deliberations will be published with the association's "Proceedings," as will those of the Faculties'.

The *cuisine* of the Tulane received a generous amount of criticism, as did the rooms assigned to many.

Twenty new members—mostly from the South—was the reward of our experiment in going below Mason's and Dixon's line; and as these would probably not have been secured otherwise, we may well feel repaid.

All in all, it was the best meeting the association ever held.

The contest for President was rather sharp—23 to 29.

An effort was made to have the Executive Committee instructed to hold the next meeting in Boston. Omaha is a lively candidate for 1898, as she is to have an exposition with reduced railroad fares, etc. Centrality and accessibility should be the factors.

The second night banquet was a great success, and its permanent adoption is assured.

ASSOCIATION OF VETERINARY FACULTIES OF NORTH AMERICA.

The meeting of this association was held at 8 P.M. on Tuesday, Sept. 7, at the Tulane Hotel, Nashville, Tenn., during the meeting period of the United States Veterinary Medical Association. Dr. Pearson occupied the chair and the following colleges were represented: Harvard University, Dr. F. H. Osgood; American Veterinary College, Dr. R. R. Bell; New York Veterinary College, Dr. H. D. Gill; University of Pennsylvania, Dr. Leonard Pearson; Columbia University, Dr. D. E. Salmon; Kansas City Veterinary College, Dr. S. Stewart; McKillip Veterinary College, Dr. F. S. Schoenleber; Cornell University, Dr. James Law; Iowa Agricultural College, Dr. M. Stalker; United States Veterinary College, Dr. C. B. Robinson; Ontario Veterinary College, Dr. D. K. Smith; Chicago Veterinary College, Dr. A. H. Baker.

Drs. Hoskins, McKillip, Clement and Parker were also present, the last two being invited to be present as representing McGill University, unofficially.

On motion of Dr. Stewart, seconded by Dr. Baker, the minutes of the last meeting were approved as read.

The Executive Committee reported favorably on the application of Dr. R. R. Bell, American Veterinary College; Dr. Greiner, Indianapolis Veterinary College; Dr. Smith, Jr., of Ontario Veterinary College, and Dr. F. S. Schoenleber, McKillip Veterinary College. Drs. Clement and Parker not being eligible to represent McGill University (not of the faculty or teaching staff) were reported unfavorably. On motion of Dr. Baker, seconded by Dr. Stewart, those representing other schools, but not eligible to vote, were invited to attend the meeting during reading of papers and the discussion of the same.

Report of Committee on Uniform Standard of Entrance Examination—(Drs. D. E. Salmon and James Law).—Dr. Salmon reported that he had no report on the subject, but that Dr. Law had. Dr. Law read his report and it was discussed at length by every member present, and the discussion waxed so warm that Dr. Law protested to the very pointed and personal remarks of Dr. Robinson, who was repeatedly called to order. When asked if the report of Dr. Law expressed the ideas of the whole committee, Dr. Salmon answered the chair that it did not, and that he would present one at the next meeting. On motion, Dr. Law's report was accepted after it had been explained that acceptance does not imply an endorsement of the views expressed. On motion, further discussion was postponed till after the reading of Dr. Hoskins' paper on "Uniformity of State Regulations Governing the Practice of Veterinary Medicine." Both papers were freely discussed; the prevailing opinion seemed to be for uniform entrance examination. On motion, Dr. Hoskins' paper was accepted.

On motion of Dr. Osgood, seconded by Dr. Schoenleber, that a committee of five (5) be appointed to report at the next meeting on the advisability of forming a "National Examining

Board," was amended by Dr. Salmon, seconded by Dr. Bell, that a provision should be made for a co-operation with state associations to secure a uniform provision in legislation authorizing the examining board to establish the standard of examination and to accept the certificate of other boards that have satisfactory requirements. Motion as amended was carried. The President appointed the following members as committee: Drs. Osgood, Law, Salmon, Schoenleber and Bell.

The following amendment to Articles I and II of the Constitution was proposed by Dr. Pearson:—"*Resolved*, That Article No. I be so amended as to read: 'This body shall be known as The Association of Veterinary Faculties and Examining Boards of North America.' That Article II be so amended as to read: 'This association shall consist of members of governing faculties and teaching staffs of all veterinary schools of North America which confer a degree in veterinary science, and of members of State veterinary examining boards that grant licenses to practice, but each college and board shall have but one vote in the meeting, and that vote shall be cast by the properly appointed delegate of the school or board.'" The President ordered it to take the regular course.

The election of officers being in order, on motion of Dr. Robinson, seconded by Dr. Osgood, the present incumbents were declared re-elected, and the Secretary cast the ballot as follows:

President, Dr. Pearson; Secretary-Treasurer, Dr. Gill; Executive Committee, Drs. Law, Stalker, McEachran, Salmon, Robertson.

On motion of Dr. Osgood, seconded by Dr. Robinson, that the minutes of the meeting and papers be published in the report of the United States Veterinary Medical Association. Carried.

Meeting adjourned. H. D. GILL, *Secretary.*

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The final meeting for the season of 1896–97 was held in Room No. 1, third floor, N. W. corner of Broad and Filbert Streets, Philadelphia, Tuesday evening, June 8th.

The meeting was called to order by Dr. James B. Rayner, with the following members of the profession present: Drs. Drake, S. H. Johnson, A. Jolly, of Atlanta, Ga.; W. H. Hoskins, F. S. Allen, H. P. Eves, W. L. Hart, James B. Rayner, W. L. Rhoads.

Dr. W. Horace Hoskins, as Chairman of the Committee on Legislation, spoke of a bill to prevent the introduction of cattle unless accompanied by a free bill of tuberculosis, having passed both houses and now only awaits the Governor's signature to become a law. The bill reported at last meeting, which will tax all carcasses coming into the State and establish a number of meat-inspectors along our border lines, has passed the House and is having a hard time of it. The bill to reopen registration met the fate which it merited, and did not emerge from the committee room. It was now explained why the great decrease in the State's income had limited to a great extent the work of the State Veterinary Sanitary Board and all similar work for a time.

The advisability of the veterinarian helping to procure bicycle paths through Fairmount Park, and thus encourage the driving public, was discussed.

It was then moved and seconded that the association enter upon the discussion of "Lameness." Dr. Thomas B. Rayner, had been designated as the one to open the discussion. He being absent, this duty devolved upon Dr. H. P. Eves. He spoke of the many trials and troubles we encounter in diagnosticating, seldom finding the same symptoms indicative of the same seat of trouble, and told of the benefit to be derived at times from the use of cocaine in cases where the effect might be plainly apparent while the lesions were obscure. He felt that much of our lameness was due to osteo-porosis, in which theory he was upheld by nearly all those present.

Dr. Jolly, of Atlanta, Ga., was now called upon. During the course of his remarks he spoke of a family of about thirty-five or forty horses in his vicinity which always show a rigidity of gait, going this way probably for years, then while driving or at work they suddenly break into profuse perspiration, go down, and in a short time die. Considerable discussion followed as to the cause.

Dr. Pearson spoke of one of the great show-stallions siring a number of colts which developed osteo-porosis. Yet many things seem to indicate that it is infectious.

Dr. Drake had seventeen cases in one stable within two years, and we find many instances of this kind regardless of location, environment, breed or work.

Dr. Pearson said it is barely possible that its cause may be a minute parasite, as is Texas fever, roup, cancer, etc., yet it is unknown in England or in Germany.

The treatment suggested was lime in its various forms.

Bone-meal, ground to an impalpable powder (it should first be burned, as by this process you get rid of all organic substances; it must then be specially ground).

Dr. Eves asked why a blind horse had a remarkably sleek coat in the winter and a rough appearance in summer. He had often noticed it, but had never found a satisfactory explanation. Can any of our professional brothers answer, or have they, like most of those present, been going around with their eyes shut?

Thus ended what has been to the members of the K. V. M. A. and their professional friends (who were enough interested in the advancement of the profession to attend the meetings, which are at all times open to them,) one of the most interesting and instructive sessions ever known in its history. The subjects of the half-hour talks were widely diversified, thus making it a post-graduate course, as it were, well worth the time of any progressive practitioner to attend, and the course here as elsewhere shall improve year by year. We feel that, with the exception of the great loss sustained by the death of our beloved President, Dr. John R. Hart, we have had a year of marked progression—a progression which was largely due to his indefatigable energy and efforts, and we hope to make the meetings more entertaining, more instructive, and more forcible year by year, so that each speaker or invited guest may feel as one of our speakers expressed himself during the past session, when he said he "considered it an honor to have the privilege of addressing the K. V. M. A., the oldest local veterinary medical association in continuous existence, also the most——" but, being secretary of the association, modesty forbids my quoting too closely his remarks on this topic.

Adjourned to meet September 14, 1897.

Dr. W. L. Rhoads, *Secretary.*

INDIANA STATE VETERINARY ASSOCIATION.

The semi-annual meeting of the Indiana State Veterinary Association was held in Indianapolis, Ind., July 13 and 14, 1897.

The meeting was called to order, L. A. Greiner, Vice-President, in the chair, with the following members present: Drs. J. W. Klotz, H. G. Roberts, G. G. Ferling, O. L. Boor, A. W. Bitting, T. B. Pote, John Cramer, J. Crail, F. W. Anderman, and J. C. Rodger. Visitors: Samuel T. Rodebaugh, Robt. B. Harper and J. B. Kinter.

The minutes of the previous meeting were read and approved; also the reports of the Secretary and Treasurer.

The Committee on Legislation made a verbal report, and were continued indefinitely.

The admission of new members consisted of Drs. S. I. Rodebaugh, New Augusta; J. B. Kinter, Danville; Robt. F. Harper, Indianapolis; Ferd. A. Mueller, Indianapolis, and Jos. A. Creedon, same place. On motion, we adjourn to meet at 7.30 P. M. On convening. we had as visitors Drs. T. J. Turner, U. S. inspector, Indianapolis, and Dr. Netherland.

Dr. L. A. Greiner then read a paper on "Navicular Arthritis and its Treatment," after which Dr. G. H. Roberts read a paper on "Acute Indigestion." This was followed by Dr. T. J. Turner reading a paper on "Veterinary Associations and What They Can Accomplish." Dr. O. L. Boor then read a paper on "Bovine Tuberculosis; Danger of Transmission to the Human Race; Method of Diagnosis and Treatment," after which the meeting adjourned to meet at 9.00 A. M., July 14th.

On convening, Dr. A.W. Bitting, of Purdue University, gave a lecture on "Formaldehyde," which was well received and a good discussion followed in regard to its antiseptic and disinfecting properties; after which we adjourned to meet in Indianapolis in January, 1898. J. C. RODGER, *Secretary.*

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The first meeting of this association after the summer vacation will be held in their rooms, in the Academy of Medicine, New York City, on Wednesday evening, October 6th, at 8 o'clock, and all members are requested to be present. All other veterinarians in Greater New York are invited to connect themselves with the society. The monthly meetings are always interesting, and metropolitan practitioners can ill afford to lose such an opportunity for profit and pleasure.

NEWS AND ITEMS.

AT the last New York State Fair A. K. Robertson, D. V. S., of Brooklyn, was one of the judges of horses.

DR. WIGHT, Delaware, Ohio, has succeeded Dr. J. C. Meyer, Jr., on the Ohio State Board of Veterinary Medical Examiners.

AT the September meeting of the Massachusetts Veterinary Association, held on the 22d, the question of reducing the annual dues from $5 to $3 was to be acted upon.

AN ORDER received by the Armour Packing Co., of Chicago, from the Orient, on Sept. 1st, calls for 1,250,000 lbs. of beef. This was the second order from the same source within a short time.

DR. JACOB HELMER MARRIED.—This well-known veterinarian was married to Miss Martha E. Shoemaker at Syracuse, N. Y., August 31st, and after a brief honeymoon returned to the home of the groom in Scranton, Pa.

"THE AMERICAN HORSE BREEDER," for Aug. 3, contains a description of Cottage Farm, at Deering, Maine, with its fashionably-bred trotting stock, which is the pride of its owner, Geo. H. Bailey, D. V. S., State Veterinarian.

DR. S. D. BRIMBALL, President of the Minnesota State Veterinary Medical Association, has been appointed by the Minnesota State Board of Health as field veterinarian, as assistant to State Veterinarian Reynolds, at a salary of $1800 per annum.

RAVAGES OF HOG CHOLERA.—The immensity of the devastation wrought by this swine affection may be approximated when the statement is considered that in 1896 the State of Iowa alone, suffered a loss of $15,000,000.

DR. M. H. REYNOLDS, of the University of Minnesota, was one of the judges in the horse ring at the Minnesota State Fair this year and will judge the horses at a number of county fairs in that State this fall.

THE September *Journal* recommends to the Agricultural Department the stocking of Alaska and the Klondike region with reindeer, whose constitutions would survive the climate, and their products of meat, milk and hides would be a source of sustenance to our citizens who have and will locate there.

DR. W. H. DALRYMPLE, of Baton Rouge, La., has been appointed to the chair of Veterinary Science in the University and A. and M. College of that State, and also veterinarian to the Experiment Stations, vice S. B. Staples, B. S., D. V. S., resigned.

GLANDERS IN A CHILD.—Dr. Fred. J. Smith, of Alton, Iowa, has had a case of glanders in a child three years of age. The lesions were frightful in character and of course fatal. The facts were reported to Dr. Gibson, State Veterinarian Surgeon, who went to Alton to see the case but arrived too late.

DRAFT HORSES GETTING HIGH.—A team sold in this (Chicago) market this week at $465. Big good ones are growing scarcer every week. The return to draft-horse breeding cannot be made too soon. The early stallion buyer seems certain to get the best bargains this fall. The supply is limited and it is difficult to figure out a sufficient number of good horses of serviceable age to go around—(*Breeders' Gazette*, *Sept. 1.*)

AGRICULTURAL EXPERIMENT STATION FOR ALASKA.—It is reported says *Science*, that the Secretary of Agriculture will ask Congress, at its next session, to authorize the establishment of an agricultural experiment station in Alaska. Suitable scientific experiments would be of great value in showing what agricultural products and domestic animals could be introduced to advantage.

COST OF THE U. S. DEPARTMENT OF AGRICULTURE.—In the appropriations made by the Congress of 1897 we find the following items, which show the cost of the Department of Agriculture for one year: Total for the Department, $1,564,760; salaries and expenses Bureau of Animal Industry, $650,000; Agricultural experiment stations, $750,000; publications, $70,000; biological investigation, $17,500; animal quarantine stations, $12,000. Total for weather bureau, $883,772. Grand total, $2,448,532.

ANTI VIVISECTION BILL.—Veterinarians should not forget that Senate Bill No. 1063 still remains on the calendar of that body. As soon as a favorable opportunity presents itself the bill will be called up for passage. This bill strikes right at the root of all original investigations in this subject, and would in all probability be followed by similar efforts in many States, which, if successful, would put an end to all progress in human and comparative medical science, and should be strenuously opposed. —(*New York Spirit of the Times.*)

MINNESOTA STATE FAIR AND HOG CHOLERA.—The Minnesota State Board of Health, after a conference with the Secretary and Director of the Agricultural Society, prescribed the conditions under which swine might come to the Minnesota State Fair this fall—to be inspected upon arrival and daily inspections during the fair week, because of the prevalence of hog cholera in that State. No disease appeared among the swine upon the fair grounds, and it is hoped that the exhibit this year will not result in any increased spread of hog cholera.

AN INNOVATION IN COLLEGE ADVERTISING.—The University of Pennsylvania has just issued a very neat illustrated pamphlet entitled "The Veterinary Profession: its Relation to the

Health and Wealth of the Nation." It consists of a series of bright articles by successful alumni of that school, treating of all phases of the question, illustrating the broad work which is now demanded of the graduate, and showing the enlarging field, to occupy his services. It will go a long way toward educating the public as to the importance of the profession in State Medicine, if thoroughly circulated, and to the popularizing of the school which sends it forth.

AT THE NEW YORK STATE MEETING.—At the very successful meeting of this Society in Syracuse on Sept. 14 and 15, the following members were present: J. L. Ronan, Corning; F. L. Kilborny, Kelloggsville; W. H. Pendry, Brooklyn; E. F. Bettinger, Chittenago; V. L. James, Cooperstown; James Law, Ithaca; M. M. Poucher, Oswego; Jas. A. Pendergast, Phoenix; G. C. Kesler, Holley; H. E. Clark, Newburgh; J. A. McCrank, Plattsburgh; W. B. Switzer, Williamson; H. D. Gill, New York City; J. M. Currie, Rome; Chas. Cowie, Ogdensburg; W. S. Corlis, Carthage; Jno. A. Bell, Watertown; Eugene M. Casey, Oxford; Romanzo Perkins, Hardy's; F. Morrow, Oneida; Thos. Burns, Watertown; Wilson Huff, Rome; C. D. Morris, Pawling; Arthur O'Shea, New York City; W. H. Kelly, Albany; Roscoe R. Bell, Brooklyn; G. G. Dean, Tully.

INTELLIGENCE OF A HORSE.—Dr. W. H. Watkins, of New Orleans, according to the *Times-Democrat*, relates that while a student, in a class where it was customary to wear a distinguishing badge, and a number of the students being one day gathered on the campus, a horse came limping toward them. He came to a stop a dozen or more feet away, and, carefully surveying us, finally made up his mind as to what he wanted to do, and without any hesitation limped directly to my side, whinnied, stuck his nose against my body, and held up his left foreleg. Looking down, I discovered a large nail embedded in the frog of his hoof. This had evidently caused the lameness. I extracted the nail and the horse whimpered with relief and walked away. Rather curious as to why the beast had picked me out to attend to his wound, I glanced at the boys and found the solution to the problem. Not one of the group had his medical badge upon his coat but myself. The horse had recognized the insignia and acted accordingly."

MYSTERIOUS HORSE SICKNESS IN MARYLAND.—A dispatch to the New York *Sun* dated Baltimore, Md., Sept. 22, says:

"Dr. A. W. Clement, State Veterinarian, has returned from a visit to the Eastern Shore, where there is an epidemic among horses which has already caused the death of over 1000 of them. Dr. Clement says the disease threatens to become epidemic throughout the State. He said to-day: 'I am almost certain the disease is caused by horses eating some poisonous vegetable matter. This theory is supported by the fact that the disease is almost entirely confined to horses which had been allowed to roam around in pastures. The horses are suddenly affected with the disease. They refuse to eat, gradually grow weaker, and are finally stricken with paralysis, and die within forty-eight hours. Post-mortem examinations on these horses show an inflamed and congested condition of the stomach, suggestive of death by poisoning. The disease has appeared in the highlands of Hartford county, where the water is of the purest quality.'"

Grand Rapids Veterinary College.—From the Grand Rapids (Michigan) *Herald* we learn that a new veterinary school is about to be established in that city with a two-year-course. It appears to be the outcome of the Detroit School extending its course to three years, and it is claimed that many of the Detroit students will go to this school, where they can graduate at the end of one year. The proposed faculty is as follows: Dean and professor of surgical pathology, Schuyler C. Graves, M.D.; professor of veterinary jurisprudence, Major E. C. Watkins; professor of physics, chemistry, canine practice, and veterinary medicine, Hugh Rutherford, S.D., D.M., D.V.S.; professor of bacteriology and histology, J. B. Whinery, M.D.; professor of surgery, obstetrics, and horse-shoeing, William Rose, V.S.; professor of materia medica and therapeutics, O. L. Dale, M.D.; professor of comparative physiology, E. Bigham, M.D.; professor of anatomy and dental surgery, M. Elzinga, D.V.S.; demonstrator of surgery, R. Peterson, M.D. The backers of the school are E. C. Watkins, L. L. Conkey, Geo. Hare, Hugh Rutherford and three or four others. The State of Michigan has just gotten rid of one two-term school, and here is another to perplex the cause of higher education.

Horse Stock of the Country.—According to the "Year Book" of the United States Department of Agriculture, issued a short time ago, there are 14,364,667 horses in the United States. Kentucky is credited with 400,879, valued at $13,056,621, average $32.57 per head. In Texas there are 1,160,101, worth $20,571,962, average $17.73; Iowa, 1,087,492, value $31,-

469,631, average $28.94; Illinois, 1,072,956, average value $30.90; New York, 621,343, value $49.67 each; Rhode Island, 10,129, value $75.25 each. The lowest priced horses are in Oklahoma, which has 39,099, valued at $13.40 each. In the State of Washington, where they have been reported as selling at $2 each, there are 176,691, valued at $20.45 each. There are 261,428 mules in Texas, valued at $29.85 per head; Georgia has 164,380, averaging $62.95 per head; New Jersey, 7492, valued at $76.70; New York, 4534, valued at $55.05 each; Kentucky, 116,854, at $33.95 each; Mississippi, 215,466, at $29.90 each. Total number in United States, 2,215,654, valued at $92,302,000, an average value of $41.65. In 1892 the value of horses in this country, numbering then 15,498,140, exceeded $1,000,000,000. In the succeeding five years the value decreased nearly $600,000,000, while the number fell off only about 1,000,000. In mules much the same effect is noticed.

Progress of the Horseless Carriage.—We received the following extract from a Rochester (N. Y.) paper from Dr. J. H. Taylor, of Henrietta, N. Y., dated Sept. 20, who says: "I witnessed the grand performance and went home more satisfied than ever with the horse, and with no fear that he would ever be driven out by this machine. There were three machines to start, but two of them would not go at all and one of the two balked several times in going less than two miles. The extract is as follows: "Horseless carriages are a decided frost, judging from those exhibited at the Western New York Fair, which closed yesterday. The fair managers had advertised the carriages as a feature and got the machines there at a great expense, and they have every reason to feel sore. Before the owners got the $500 for exhibiting their carriages, they promised to run races daily and to match their inventions against bicycles and furnish unlimited sport in other ways. When the timefor the actual test came, but one of the carriages could be made to go. That one went a mile in a few seconds less than four minutes. There was quite an argument between one disgusted manager of the fair and one of the owners of the carriages. The latter wanted to wager that he could make the machine go a mile in 2:35. The fair official offered to bet any amount of money up to the thousands that the other fellow couldn't make good his claim. The argument resulted in nothing definite, as both men only talked and didn't show any money. Outside of the horseless carriage fake, the fair was a success, both socially and financially."

An Intelligent Horse—Took His Drunken Master to the Police Station.—Friday evening, about 5 o'clock, a horse attached to a buggy, in the front of which was wedged a helplessly intoxicated man, cramped between the seat and the dash-board, fast asleep, his head fallen forward, one hand dropped outside the buggy and held listlessly in a half extended position, and the other twisted behind him, walked sedately up Second Street from some point on Walnut, and, arriving in front of the police station, gave vocal expression to a desire to have some one come out and confer with him with possible reference to the unconscious occupant of the vehicle the quite intelligent animal was pulling. Sergeant Sunberg and Jailor Collins, who happened to be in the front room, had their attention attracted to the whinneying, and, looking out of the window, saw the inebriate leaning over the dash-board, marks on which suggested a recent attempt of the stomach to secede from the locality of the boot heels. The two officers gazed in fixed astonishment for an instant, when the horse, getting a glimpse of them through the open window, renewed his demonstrations, and winked knowingly, as much as to say: "Here, you fellows. Come out here and unload this drunk and relieve me of the responsibility of caring for him and myself on the crowded streets." They responded to the mute appeal, and, backing the buggy to the jail door, lifted the unconscious man out and put him in jail. The moment the horse was relieved of its helpless burden, he murmured a low chuckle of delight, and, walking into the public pound in the rear of police headquarters, ambled up to a feed trough and "hollered" for a square meal. It was afterward discovered that the horse had threaded his devious way through the maze of vehicles for six blocks on Walnut, and afterward turned north on Second, and, with rare intuition amounting to almost human intelligence, conveyed his drunken driver to the place of all others where, in his oblivious condition, he belonged. The mayor, when informed of the extraordinary incident, demanded to see the horse, and later seriously entertained an expressed intention of placing the equine on the force as a special during the fair.—(*Iowa State Register. Sept. 11.*)

BACK NUMBERS REVIEW WANTED.

The Iowa State Board of Health will pay 50 cents for No. 6, of Vol. XIX and $4.00 each for volumes IX and X complete. Address Dr. J. F. Kennedy, Iowa State Board of Health, Des Moines, Iowa.

AMERICAN VETERINARY REVIEW.

NOVEMBER, 1897.

EDITORIAL.

SECTION WORK IN THE U. S. V. M. A.

For months prior to the last meeting of the National Association the REVIEW kept this question before the members. It hoped by this means to show the necessity for some definite action along this line to perpetuate and extend the interest in and to promote the value of the association. A retrospect of the proceedings of its meetings for the past few years will show the crying urgency of providing some means of gaining more time for transacting a greater volume of business, it matters not whether it be executive or educational. It appeared to us to be unpolitic to extend the length of the meeting beyond the customary three days; to be unwise to limit the number of papers to be presented. It was proving unsatisfactory to pursue the course which circumstances were forcing upon the association—limiting discussions to the minimum, omitting the reading of portions of papers, curtailing many to the simple announcement of their titles, with reference to the Publication Committee, which was not always in a position to have the "Proceedings" printed for lack of funds. As an instance of the trend of matters, a member being solicited to contribute to the educational programme might respond with a carefully prepared essay, consuming illy-spared and valuable time and in some instances considerable expense, and, after traveling hundreds of miles in order to read and discuss the subject, might find on the last day of the meeting that the time for the reading of papers was expended before his costly production had been reached on the programme, unintentional and unavoidable as it was. He boards his train for his far-away home in a disappointed manner, feeling sullen, poorly repaid and chagrined. Many others, possibly, had prepared themselves to take part in the discussion of that very paper, having through some circumstance become deeply interested in the subject of the thesis; but they lose both the pleasure and the profit of listening to the essayist and the opportunity to give expression to their own views. Important discussions on State Medicine must bear their proportion of the general pruning, and thus it has become a matter of the most delicate discrimination on the part of the officers of the association to dispatch the greatest amount of business and give the least amount of offense.

We were pleased to gather the views of a large number of the members during the Nashville meeting, and to hear their personal expressions upon this subject. With few exceptions, they were unwilling to miss any part of the programme; State Medicine was as interesting and profitable to them as the practical papers, and *vice versa.* They felt that the time had not arrived when the divorcing of any branch now included under the term "veterinary science" could be undertaken without serious injury being inflicted upon the association and the profession; that the practical veterinarian of to-day must possess a general knowledge of and proficiency in every collateral branch of the profession, and that no individual member, especially the general practitioner, can afford to ignore any department.

But a solution of the vexed question imposed itself upon the meeting of 1897 by the urgency of the situation. It was proposed to the meeting that, in view of the length of the programme, simultaneous sessions (one section devoted to State Medicine, the other to practical subjects) should be held; but the dissent was so general that a motion to hold night sessions prevailed unanimously, and through their instrumentality every member who had prepared a paper and was present had the opportunity to be heard; the discussions were general and practically unlimited, and a very great amount of work was disposed of. The members expressed themselves as well satisfied with the innovation, and, although the pleasure programme was in consequence somewhat restricted, the convention of 1897, at least, appeared to have no other concern than the programme of education.

Is this the solution of the "section" question for the present? We think so. We believe that under all the circumstances it is the best for the immediate future.

VETERINARY EXPERT TESTIMONY NEEDED.

The *Medical Record* in a recent issue editorially deplores the discrepancy in the evidence of so-called anatomical experts figuring in the sensational trial of Luetgert, who disputed over the identity of the bones found in the sausage vat. The public is amused by the flat contradiction of alleged scientists regarding certain points which distinguish the bones of a woman from those of a hog.

The *Medical Record* is inclined to believe that the cause of the disagreement in the evidence lies in the fact that the so-called experts were *hired* and that this case shows the utter fallacy of hired expert testimony, and recommends that the court appoint an impartial commission of skilled anatomists.

In most matters we have a high opinion of the views of our worthy contemporary, but we are not ready to believe that members of our sister profession would be guilty of the crime ascribed to them. Our humble opinion is that the trouble lies in the fact that human anatomists were talking on a subject that they actually knew little or nothing about—namely, comparative or veterinary anatomy. We are proud to say that there are a hundred or more veterinary anatomists in this country that could give the necessary points of differentiation off-hand. W. H. L.

DR. W. H. DALRYMPLE, of Louisiana, delivered a most scholarly address before the twenty-first annual convention of the American Humane Association, at Nashville, Tenn., on October 15, his subject being "The Close Relation Existing between the Veterinary Profession of To-day and Organized Societies for the Prevention of Cruelty to Animals." It will be published in the December REVIEW.

"THE COUNTRY SLAUGHTER-HOUSE AS A FACTOR IN THE SPREAD OF DISEASE," by Ch. Wardell Stiles, Ph.D., is received from the Bureau of Animal Industry, and is full of wise and thoughtful suggestions, adding to the data which are gradually accumulating to the end of placing all slaughtering in central abattoirs, and under governmental inspection.

ORIGINAL ARTICLES.

[WRITTEN SPECIALLY FOR THE AMERICAN VETERINARY REVIEW.]

THE GOAT AS A MEANS OF CHECKING THE SPREAD OF CONTAGIOUS DISEASES TO MAN AND DOMESTIC ANIMALS.

By A. S. HEATH, M. D., V. S , NEW YORK CITY.

"*Health is the principle of bliss.*"

The goat has a digestion so strong, and a vitality so persistent, that it can eat many of the most virulent vegetable poisons, and eliminate the poisons, and extract the nutriment from poisonous plants and convert it into healthy life-giving products. The poison hemlock, the foxglove, the stramonium and other like plants are such as the goat eats with perfect impunity.

From the earliest period of human societies this hardy, wild and erratic creature has been subjected to the power of man, and, like the ox and sheep, has ministered to his comfort and needs. And now at the dawn of the twentieth century the goat comes forward to defend the human race against the contagious diseases engendered by the errors of civilization.

The sacred writings are profuse in references to the goat, as forming, together with the sheep, the ox, and the camel, the riches of the patriarchs. Moses permitted the goat to be used as human food, and employed him in a remarkable religious ceremony. He was cultivated by the Hindoos from the remotest times, figured in the sculptured monuments of the Egyptians, in their representations of mystic emblems, religious rites, and rural labors. The writers of Greece and Rome proudly referred to the goat as yielding food and raiment for the comfort and sustenance of mankind. And because in our day he has been ridiculed and contemned, we refer to his ancient honors. "He was dedicated to Jupiter Conservator, and sacrificed to Apollo, Diana, Bacchus, and the Paphian Venus, and his skin was the ægis of the Goddess of Wisdom and Arms. His form was one of the attributes of Pan and the Satyrs, indicating the procreative power and rustic plenty."

The goat is one of the twelve signs of the zodiac.

As one of the evidences of superlative vitality, the goat has the senses of sight, smell, and hearing in exquisite perfection. And as an evidence of his hardihood and vigorous health, he resists with impunity the extremes of heat and cold. "The female in the wild state, when about to give birth to her young, seeks some lonely place where she may be safe from surprise, usually near some rivulet or spring, proceeding from the glaciers and mountains of snow surrounding her. The kids, when born, are covered with a short gray fur of hair and wool ; their limbs are stout, and their bodies light and buoyant, and in a few hours they are able to follow the dam, who vigilantly guards them from the attacks of eagles and other beasts of prey."

So far as history informs us the goat was domesticated by the Lybians and the nations stretching along the southern shores of the Mediterranean inland to the mountains of Atlas. He was cultivated by the Dacians, Sarmatians and the nations along the Euxine and the wilds of Scythia. The Gauls, Celts, Cambro-Britons, the people of North Britain mountains and Ireland cultivated the goat to a greater extent than the sheep. So likewise did the Scandinavian, the German, and Teutonic nations, as well also the tribes of the boundless regions of Eastern Asia and those of Africa. Neither the goat, the ox, nor the horse was found on the American Continent. Though at present comparatively few in number as compared to our immense flocks of sheep, yet it is hoped that the goat may render us and all mankind a service that shall gladden the hearts of the hygienists of the Boards of Health, with a sublime sanitary service in curtailing the ravages of contagious diseases, and especially of that blight of human and animal life, tuberculosis.

It seems to be a popular reputation of the goat to be able to convert waste paper, the bark of trees, and even tin cans into milk and meat, and hair for clothing, and morocco for boots and shoes, and kid-skin for gloves. But, better than all, dispensing goat vitality through their milk and meat.

Goats seldom die from disease, but are slaughtered by the cold-blooded hand of man.

It costs us immense sums to import the manufactured products of goats. Whereas by a wise and liberal cultivation of this hircine tribe of domestic animals, we could save the cost of importation of these products, and at the same time humanely protect our people from the fatal plague of *consumption*, to a degree, hopefully and inconceivably great, by the supply of milk and meat never poisoned by the germs of disease.

In an economic point of view, goats and their valuable products can be raised and produced at small cost as compared with similar products from other domestic animals. Fully one-half of all the milch cows of our country—and there are about sixteen and a half millions—do not pay the cost of their keep in the value of the products they yield. And, besides, these products of meat, and milk and butter, and cheese, and hides of these cows, are *honestly suspected* of transmitting the malignant germs of fatal diseases to both man and domestic animals. The milk and meat supply of our dairies can only be kept free from the dissemination of infectious diseases by the most severe and arbitrary power of hygiene. And such treatment our free and independent sovereign agriculturists will never fully submit to, though reasonably certain of resultant self-interest to themselves.

Added to the refuse and waste of the home and dairy, twenty goats can be kept where one cow is now kept. And every female goat will pay compound interest on the investment on her account. The laborer's family in a modest rural or suburban home, can keep a goat or two on the refuse of the table, and the value of one-quarter of her milk, value in hay, oats, and roots, or their equivalent in other goat food, and at the same time have the satisfaction and safety to health, of the richest and most digestible of all kinds of milk, beside the enjoyment of a male kid to make merry with the family and friends. My market friends tell me that a six-weeks-old-kid fattened on goat's milk is among the most delicious kinds of young meat, favorably comparing with that of the lamb or of the calf. I will seek an early opportunity to verify the undoubted truth of my friends, though the brother of the *prodigal* seemed to esteem the *fatted calf* above that of the kid.

The goat with a flock of sheep is a self-instituted guardian. He is brave and bold, attacking animals ten times his size ; not only in self-defense, but in the defense of the sheep. Were a few goats kept in every flock of sheep, the fearful destruction of sheep by dogs in the United States would be far less than at present. A dog that would attack a ram or bull will not attack the goat. Besides, the goats would leave the fine pasture for the sheep and live on that the sheep would leave.

The goat, obeying his pristine instincts, delights in high places, and when he assumes the guardianship of a flock of sheep, his high position and keen sight readily detects every approach of an enemy. This is the natural position to watch his own wayward frolicsome kids who are prone to long and devious excursions.

Goats enjoy the company of men, and are especially fond of frolics with children, though they suffer many cruelties from them. They are intelligent animals, and proud of colored trappings. They foster the young of many other species of animals. The female has been known to suckle a motherless fowl, calf, puppy, or kitten. Hindoo and African children, it is said, have been fostered, fed and cared for by the affectionate mother goat.

The goats of Ireland, doubtless derived from the Mediterranean stock, are fine, gentle and large milkers. Their udders are large, hang almost to the ground, causing a peculiar gait in walking. The yield of milk will average about seven pounds daily, even without much corn or food.

The city of Lyons, the second city of France, is supplied with cheese and milk from goats, and doubtless the health of that city of narrow and filthy streets, with high and crowded buildings, is largely dependent upon the best milk and cheese supply of any city in the world. Lyons is located very like New York, on a tongue of land between the rivers Soane and Rhone. Had Lyons a Waring, and New York a supply of goat's milk and cheese, both cities would possess a very much better health record.

> "There is no flock, however watched and tended,
> But one dead lamb is there;
> There is no fireside, howsoe'er defended,
> But has one vacant chair."

Goats do not have the diseases common to sheep. They bear confinement better than any other species of domestic animals, and when well fed and cared for the female goat can raise and fatten two lambs at a cost of one with the ewe. The milk of the goat, though richer in the proteids—fleshmakers and menders—is more easily digested than cow's milk, and therefore specially adapted for the nourishment of delicate children and consumptives.

In Spain and Portugal, the goat is mainly cultivated for its milk, and the flesh of the kids. Travelers tell us that the goats there are to be seen driven into the cities in the morning, and milked at the doors of the houses.

The goat is frequently kept with other animals because of the supposition that his presence among them promotes their health. And more certainly his presence with vicious bulls or stallions softens their vicious tempers from the social friendships formed between them. This should teach the breeder and owner of domestic animals that severe confinement and seclusion from their kind or fellows of the breed, creates in males, especially, vicious habits and morose tempers. And it should be borne in mind that these evil tendencies are transmissible to offspring, thus perpetuating vices which render them dangerous to man and to their own species. The goat being more intelligent than most animals, becomes a leader when associated with them, and the kindly treatment and education received from man naturally exerts a benign influence over his animal associates.

When well fed and kindly treated the female breeds twice in the year, generally giving birth to twins. Beyond the economy of milk production, and the service the goat can render in protecting sheep from the destructive ravages of stray and worthless dogs; the wholesome sanitary protection against tuberculosis by furnishing rich, pure milk, free from the disease bacilli, and the meat of the male kid as wholesome as the milk, will render a service of superlative sanitary value to mankind and to the domestic animals he prizes.

Analysis of Milks.

It will be seen that cow's and ewe's milk contain too much cheese, rendering it too indigestible, and that human milk and that of the goat are nearly alike in butter, and by adding a very little water to goat's milk, it is very like human.

	Woman.	Cow.	Ass.	Goat.	Ewe.
Proteids	1.52	4.48	1.82	4.08	4.50
Butter	3.55	3.13	0.11	3.32	4.20
Milk sugar	6.50	4.77	6.08	5.28	5.00
Saline matter	0.45	0.60	0.34	0.58	0.68
Water	87.98	87.02	91.68	86.80	88.62

To correct a popular error that sterilization is a safeguard against contracting disease from milk thus treated when kept for a day or two, and that it improves the value of the milk as food, I give Dr. Conn's valid objections against sterilization :

1. It changes casein in such a manner that it is not easily curdled by rennet.

2. It liquifies the fat, and thus destroys it of an emulsion.

3. It coagulates the lactalbumen.

4. It partly carmelizes the milk sugar.

5. It destroys the starch digesting ferment, which is always present, and which normally aids the digestive fluids in disposing of food.

6. It alters the taste.

7. It altogether renders the milk less digestible, so that the weak stomach is less capable of digesting and assimilating it.

These statements of objection apply to all milks, not excepting even the goat's milk, the most digestible of all species of milks.

Dr. Conn is authority on milks, to whom the profession depends.

ANIMAL AND VEGETABLE ALBUMINOIDS.

Nitrogenous Nutrients.	Animal Albuminoids.	Vegetable Albuminoids.	Gluten of Wheat.	Casein of Milk.	Oats.	Peas.	Beans.	Wheat.	Barley.	Maize.	Mucidin from Wheat.
Carbon........	53.5	53.5	52.90	53.0	51.63	51.48	51.48	54.55	54.69	5.41	52.67
Hydrogen.....	7.0	7.2	7.00	7.0	7.45	7.02	6.96	7.27	7.51	6.90	7.10
Nitrogen.......	15.5	16.5	16.95	16.0	17.45	17.13	14.74	15.70	16.33	16.32	18.01
Oxygen.......	22.4	21.8	22.05	22.5	22.64	23.97	26.35	22.48	20.78	21.48	21.47
Sulphur.......	1.6	1.2	1.10	1.5	0.79	0.40	0.45	.....	0.69	0.88	0.85

Food plays a very important part in the economy of man. It furnishes brain, and blood, and brawn, the elements of nutrition, for heat and repair of body, and for the maintenance of health and life. How much of human happiness and peace to the family and to the nation depends upon good and ample food supply! Though all life begins in a cell, yet, it is essential that that cell should be well fed and served, so that the functions of life and that of health shall be secured and maintained throughout the alloted period of life.

The hygiene of the home, and of the home individuals, is the unit of desires of universal attainment of the blessings of long life of the race of mankind. It is the chiefest desire of the rich and the poor alike, the master and the slave, of the illiterate and the learned, of the timid Hindoo and the warlike Arab, of the European and the American. It is of the first importance that the workers of the home should have a good and an ample supply of pure sound food, and as goat's milk is the most perfect food for the children of all, all should possess it in the fullest and amplest supply for the home.

With veritable rapid transit for Greater New York, the workingman can reside in the healthy suburbs, from which he can reach his place of business within an hour for five cents each way.

> "From toil he wins his spirits light,
> From busy day the peaceful night;
> Rich, from the very want of wealth,
> In heaven's best treasures, peace and health."

To include another class I quote a couplet from Pope:

> "Reason's whole pleasure, all the joys of sense,
> Lie in three words—health, peace and competence."

To include the whole human family I cannot resist a couplet from Goldsmith's "Haunch of Venison":

> "Such dainties to them, their health it might hurt,
> It's like sending them ruffles when wanting a shirt."

U. S. Department of Agriculture,
Bureau of Animal Industry,
Washington, D. C., September 24, 1897.

Dr. A. S. Heath, Morris Ave. & Ash St., New York, N. Y.

Dear Doctor:—I am in receipt of your letter of the 23d inst., and would say in reference to your suggestions concerning the use of goats' meat, milk and cheese, that I have often wondered why goats are not more extensively used in this country, at least for the production of milk for young children. Certainly there would not be the danger of tuberculosis infection from the milk of the goat that there is from the milk of the cow under present conditions. There appears, however, to be an unreasonable prejudice against the animal with most Americans. This, no doubt, could be overcome by proper educational influence.

As to the part which may be taken by the Government in curtailing human and animal tuberculosis, this is at present somewhat uncertain. This Bureau is now preparing tuberculin for detecting tuberculosis in cows and supplying it free of cost to State authorities who have power under the law to act in reference to that disease. We shall also probably in the near future test all cattle imported into this country for breeding purposes. Owing to the great amount of work which this Bureau now has in charge, it is not likely that any further steps will be taken concerning tuberculosis in the near future.

The Department has no objection to your using lantern slides in your lectures made from the lithograph plates in our bulletins. I should be pleased to receive copies of anything you write in regard to tuberculosis or other diseases.

Very respectfully,
D. E. SALMON,
Chief of Bureau.

It gives me real pleasure to give the above information from such a high source, as well as being gratified to be sustained in my views on a subject of universal importance to the general public, by Dr. Salmon, one of our most distinguished comparative pathologists, who is performing a most herculean work in the suppression of tuberculosis and other animal diseases injurious or fatal to mankind.

A. S. HEATH, M. D., V. S.

RESULTS ATTAINED AND ATTAINABLE BY STATE CONTROL OF TUBERCULOSIS.

BY JOHN M. PARKER, D. V. S., SECRETARY MASSACHUSETTS CATTLE COMMISSION, HAVERHILL, MASS.

Read before the United States Veterinary Medical Association at Nashville, Sept. 8, 1897.

(*Concluded from page 471.*)

In referring to the work of the local inspectors, one often hears the remark made, that physical examination does not amount to much any way! Now, while I admit that many bad cases cannot be picked out by physical examination, yet I am also satisfied that a large proportion of the bad cases of tuberculosis can be picked out, and many more can be suspected, so that they may be quarantined and tested. As a rule the bulk of cases of udder tuberculosis and a large proportion of generalized tuberculosis will usually show some suspicious symptom, and if these bad cases are got rid of, and if the milk supply is obtained from such animals as are in good general health and show no physical evidence of disease, the danger, I believe, would be reduced to a minimum.

As showing the good that can be accomplished by a herd-to-herd inspection, even by those who cannot be considered experts, I wish to call your attention to the following table ; this refers to the work done by the local inspectors for the past three, years and while the tables are not to be considered absolutely correct, especially in the year of 1895, yet I believe they give in a fairly accurate way at least the approximate number of bad dangerous cases that have occurred in each year.

LOCAL INSPECTION.

Jan. 1st to Dec. 31st, 1895.

No. of animals tested	4484	
“ “ “ condemned and found diseased	2398	or 53.4%
General tuberculosis	784	or 32.6%
Animals tested—no reaction—Per. to kill Per P. M. lesions found	53	

Jan. 1st to Dec. 31st, 1896.

No. of animals tested	7062	
“ “ “ condemned and found diseased	4173	or 59.0%
General tuberculosis	1051	or 25.1%
Animals tested—no reaction—Per. to kill P. M. lesions found	82	

Jan. 1st to June 30th, 1897.

No. of animals tested	5300	
“ “ “ condemned and found diseased	3016	or 56.9%
General tuberculosis	84	or 2.7%
Animals tested—no reaction—Per. to kill P. M. lesions found	21	

You will notice of course that the last year is incomplete ; the table only takes up to the end of June, but in the time it includes the yearly inspection, which was carried on this year in the spring instead of the fall, and at the present time the great bulk of the work is over and only a very few cattle are being placed in quarantine by the local inspectors.

You will notice further that there were more animals quarantined this year than in 1895. In '95 out of 4484 animals quarantined, 53.4 per cent. were condemned and found diseased, and 32.6 per cent. had generalized tuberculosis. In 1896, 7062 animals were quarantined; 59 per cent. were condemned and found diseased, and 25.1 per cent. had generalized tuberculosis, an increase in the number of cases of tuberculosis and a considerable decrease in the cases of generalized tuberculosis from the previous year. This year 5300 were quarantined, 56.9 per cent. of these were condemned because of reaction; and were found diseased, and only 2.7 per cent. had generalized tuberculosis. This means simply that the bad dangerous cases have been got rid of to a great extent, and I believe by perfecting this system the conditions can be still further improved, and all danger to the public health from this source practically eliminated. It is, I know, an immense improvement over previously existing conditions.

But the work of the Board does not end here. The law says (Sect. 45 of Chap. 491 of 1894, as amended by Sect. 10 of Chap. 496 of 1895):

"When the board of cattle commissioners or any of its members, by an examination of a case of contagious disease among domestic animals, becomes satisfied that the public good requires it, such board of commissioners shall cause such animal or animals affected therewith to be securely isolated, or shall cause it or them to be killed without appraisal or payment, provided, however, that whenever any cattle condemned as afflicted with the disease of tuberculosis are killed under the provisions of this section, the full value thereof at the time of condemnation, not exceeding the sum of sixty dollars for any one animal, shall be paid to the owner thereof out of the treasury of the Commonwealth, if such animal has been owned within the State six months continuously prior to its being killed."

There was nothing in this law to prevent an owner having his herd tested by private test, if he so desired. If the test was made by a regular veterinarian, the State could only accept it, appraise and destroy the cattle and grant the owner compensation.

This was an ideal method for both the unscrupulous owner and veterinarian ; by this method there were no restrictions placed on the owner ; he could test as many or as few animals as he desired. Many times owners would have their herds tested without any idea of attempting to keep them free from disease ; when the reacting animals were destroyed others were bought without test and often placed in the same barn without any attempt at cleansing or disinfection. Such a method of doing business was neither common sense nor business-like ; there was little use in the State paying for cattle that reacted to a private test, unless the owner really desired to clean up his herd and meant to stick to it once he began it. This is a point of a good deal of practical importance. The business man and the capitalist ; the men who make a business gain out of the sale of milk from tuberculin-tested cows ; the men who run their own milk route, who have their own customers, and who get from 2 to 3 cents more per quart because of the test ; such men naturally wish to have their cows tested, and would naturally keep it up as a business investment. Then, again, the men who raise their own stock, and who wish to get rid of disease for the sake of their own herds, in which they are interested ; they would also be likely to keep up the work in one way or another, for, they think, if we can only once get rid of the disease, we stand a fair chance of keeping free from it. They have got an object in view ; they aim at something definite.

On the other hand the dairyman who ships his milk to the contractor, who gets the contractor's price, who has the surplus question to deal with, who sells his cow when she runs dry, and buys fresh cows to replace the old, he has to buy frequently, and test every cow he buys, and has to run chances at that. What encouragement has he to keep up the work ? There is no profit in it for him ; he has no increased price for his milk. There is simply added expense without increased gain.

Is it any wonder, then, that, although he may be enthusiastic at first, yet after a time he loses interest, and finally through want of enthusiasm and want of encouragement he is apt to become negligent and introduce cows into his herd that have not been tested, and this carelessness and indifference of course is liable at any time to undo any good that had already been done.

Realizing something of this and feeling that many of the farmers, who had their herds tested by private test, did not recognize their responsibility in the matter, a letter was sent to each individual calling his attention to the law allowing him compensation "not exceeding the sum of $60" for animals killed as tuberculous, provided, such person shall not have, prior thereto, in the judgment of the cattle commissioners, by *wilful act or neglect*, contributed to the spread of tuberculosis; but such decision on the part of the commissioners shall not deprive the owner of the right of arbitration as hereinafter provided. The letter then continued: "If an owner does not thoroughly disinfect and cleanse his barn, or if after having had cattle taken and paid for by the State, he introduces untested animals into his herd, he has through his neglect contributed to the spread of tuberculosis, and, therefore, under this section, forfeits his right to compensation for such tuberculous animals as may hereafter be found in his herd."

After having had their attention called to the matter, one would naturally suppose that farmers who had gone to the expense of having a private test made, costing them anywhere from $10 to $100 and over, would take interest enough in the matter to cleanse their barns, especially after being warned of the penalty of neglect, but on investigation it was found to be the exception rather than the rule when any cleansing even of the simplest nature was done.

The Board then decided to send around a special agent whose duty it would be to call on each individual who had had his herd tested, see whether the barn had been attended to and report to the Board. This was done and this work has been specially productive of much good. Up to the end of August 530 barns, where private tests had been made, had been visited; out of these 530 barns it was found that only 42 had been cleansed and disinfected, and in 488 absolutely nothing had been done in the way of cleansing. Out of the 530 only 95 were respectably clean, and 435 were filthy. The usefulness of this work is well shown by the results following these visits.

By the end of August a second visit had been made on 158 barns where the owner had previously been found negligent. Of these 158 barns visited the second time, 134 were found cleansed and disinfected and in only 22 had nothing been done. These 22 were all in a dirty condition, several of them being absolutely filthy. Such work as this is exceedingly important, not only because of the practical amount of good it does in removing infectious material from the barns, but in an educational way as well. This I believe is the key to the whole question, and it is surely something that no intelligent man can reasonably object to.

During the early months of the year, the testing of herds by private test, where the owner seemed to care for little except how to get a good appraisal for his cattle, became so frequent that in June the Legislature passed a law to the effect that "No person having animals tested with tuberculin shall be entitled to compensation from the treasury of the Commonwealth for any animals that react to the tuberculin test, unless such testing be done by the State Board of Cattle Commissioners, or their authorized agents acting as such at the time of the test, and such testing shall be subject to the supervision and control of the State Board of Cattle Commissioners." "This act shall take effect upon its passage. (Approved June 10, 1897.)" The immediate effect of this law was to shut off indiscriminate, irresponsible testing.

The State is willing to assist an owner to purge his herd from disease if the owner is in earnest, but before it will undertake to assist, it requires him to sign a written agreement that he will observe the sanitary regulations prescribed by the Board, and that he will not introduce any animals into his herd without first subjecting them to the tuberculin test. In this way herds are only tested where the owner is not only willing, but anxious to keep up the work, and of course under these circumstances there is a much better prospect of the work resulting in permanent improvement.

But many times even when there is not only enthusiasm but unlimited capital behind the endeavor to rid a herd of disease, even then it is not always an easy matter.

About eighteen months or two years ago, a number of herds in Massachusetts were tested with tuberculin, under promise from the owners to observe certain conditions. Among those tested was one belonging to Mr. H., consisting of 81 animals. This herd was carefully tested, and the figures submitted to the Board, and 28 animals considered certainly diseased by the Board were condemned and destroyed, and a number were held for retest. The animals held for retest were kept in a separate pasture, and were not allowed to mingle with the rest of the herd. Of these, 13 animals were retested, condemned by the Board and killed, the others passed as sound. Before these cattle were allowed to join the herd, an attempt was made to disinfect the barn as thoroughly as possible.

In October, 1896, sixteen months after the first test, the farm was again visited, and one lot of 50 head, kept in the new barn, were tested. These consisted of 29 of the original lot; of the others, 18 were Vermont cattle, and all had been tested carefully before being shipped, especial pains being taken to secure only healthy animals. Three others, not tested, were introduced into the herd on or about September 30, and at that time Mr. H. notified the Board, and it was expected that the entire herd would be retested immediately. However, because of the difficulty in securing sufficient tuberculin, a delay of a few weeks occurred, and it was not until October that two members of the Board visited the herd and tested the lot. Of the 50 animals tested, 27 reacted, were condemned and killed, 25 of which proved to be tuberculous upon post-mortem examination.

About two months later the remaining 28 animals in the old barn, which had been kept entirely separate, were tested and 16 gave well marked reactions. The barns were disinfected and the 16 cows, being mostly dry cows and springers, were isolated on one side of the barn, two partitions being placed between them and the other cattle. They stayed here until March 5th, when they were again tested, and at this time they gave 14 well marked reactions. The temperature of the other two cows at the second test read as follows:

No. 129. 1st test, Jan. 8, 101; Jan. 9, 101–104.4, 103.4, 103.2. 2d test, Mar. 5, 101, Mar. 6, 101.3–101.3–101.3–102–99.4.

No. 5468. 1st test, Jan. 8, 101; Jan. 9, 104–105–105.1–104.4. 2d test, Mar. 5, 101; Mar. 6, 101.4–101.4–102.2–102.2–102.2.

Both were killed, and on post-mortem examination proved to be diseased. The barns were again disinfected with bichloride of mercury, 1:800, and whitewashed later.

On the 1st of May, 1897, the entire herd of 84 head were again tested, and this time 15 animals or 17 per cent. gave reactions, and were killed. The post-mortem examinations showed these animals to have been only very slightly diseased.

The barns have been twice disinfected during the summer and another test will probably be made in October. After every test, when cattle have been condemned, the herd has invariably been replenished with tested cows from Vermont.

A second herd belonging to Mr. E. is another good illustration of the difficulty in thoroughly disinfecting barns. After being first tested and cleaned up in Oct., 1894, this [illegible] retested on March 17th and 18th, 1896. There were 80 animals in the herd, 78 of which were tested, 2 animals having a temperature too high at the time to be injected. Fourteen animals reacted or showed a suspicious rise in temperature; they were immediately separated from the remainder of the herd, were again retested June 19th and 20th, at which time two were released, three were condemned and nine were continued in quarantine. On Oct. 7, 8 and 9, these nine quarantined animals were tested and condemned.

On Aug. 16 and 17, 1896, sixty-four of the original herd and one animal which had been introduced recently were tested.

None of the original animals reacted to the test, while the animal which had been introduced from outside, reacted and was condemned, and upon post-mortem was found to be tuberculous.

In the meantime a new barn had been built and was used as the home barn; the old barns were disinfected as thoroughly as possible and the young stock and the dry cows were housed in them, the fresh cows being brought to the new barn as they came in.

In the month of August, 1897, exactly one year after the previous test, the herd was again tested. At this time there were 154 animals at the home farm. These were all tested; 22 were condemned and killed as tuberculous and 32 were released. Five out of fifty-four at the second farm were condemned and one out of fifty-eight at the third farm was also condemned. All these cows were found to be diseased, the disease being very slight and confined entirely to the bronchial and mediastinal glands.

It is but fair to state that another of the reacting animals was a registered bull, "Sir Michael." He had been kept isolated from the rest of the herd except when being used for service, since March, 1896, when he first reacted. At that time the temperatures were:

8 P. M., 101; 6 A. M., 101,101.2,103.4,104.4,104.3,104.2,104.3, 104.2,103.

June 13, 1896, 9:30 P. M., 101.1; 7:30 A. M., 102.3,103.1, 103.1,103,103,101.3.

August 18, 1896, 7:00 P. M., 101.2; 5:00 A. M., 101.1,101, 102.2,103.4,104,103.4,103.4.

And Aug. 18, 1897, 8:00 P. M., 101,101.1; 7:00 A. M., 101.2, 103.1,104.3,105.

This bull has been used for service on nine cows out of the twenty-two that have since reacted and were killed, one of the cows had been served as recently as July 21, 1897, or just about four weeks before the last test was made.

The fact that none of the cows showed any traces of tuberculosis except in the bronchial and mediastinal glands would seem to exclude the bull as a possible source of infection, so far as sexual intercourse was concerned, in any of these cases.

In studying the problem of State control I should like to call your attention to the principles of sanitary science as applied in the United States and European countries, to the suppression and prevention of contagious disease.

A few years ago, at the time of the latest cholera scare, the seaports of this country were all guarded and a strict quarantine of all vessels coming to this country from infected ports, was enforced. Most European countries took the same precaution. Great Britain, however, proved an exception to the rule. Her ports were open to the world, vessels of all nationalities went in and out and tourists and travelers from all countries had the right to go and come as they pleased. Great Britain relied on the excellence of her internal sanitary arrangements to combat the disease. If she had placed all vessels from infected ports in quarantine the loss to the country would have been tremendous. The traffic between Great Britain and other countries was too great and the number of vessels entering her ports from infected countries were too numerous to permit of it. The disturbance to traffic would have been enormous, and in the opinion of the authorities the gain would not have been commensurate with the probable loss; other means, therefore, had to be relied on to control and check the spread of the disease.

In the same way the difficulties in the way of the total and permanent exclusion of the tubercle bacillus are too great to permit of our relying on these means alone, we must not only attempt to control the breeding places of the bacillus and lessen the number that are mixed with the dust in infected premises, but we must look to the perfecting of internal sanitary arrangements, so that individuals may not become such easy victims of the disease, and by using all the means in our power and by constant and continual effort the existing conditions may be bettered, so that in time we may reach some measure of success, without the great expense involved in the total destruction of all animals that react to the test.

In Massachusetts during the year 1895 there were 1549 cattle tested by private request, representing 109 entire herds. Of this number 433 or 27.95 per cent. were condemned. In 1896 there were 2021 cows tested by private request, representing 281 entire herds; of this number 1098 or 54.32 per cent. were condemned. This year up to July full returns had been received from 1810 cows, representing 153 entire herds; of this number 911 or 52.54 per cent. were condemned. This percentage includes 4 herds recently cleaned up in the western part of the State. These four herds include 96 animals, only 3 reacting, making a percentage of 3.1. It will be interesting to see how these tests stand a year from now.

This work is different from the work of the local inspection, in that the inspectors only pick out such animals as show some physical evidence of disease, while this work represents the testing of entire herds scattered at haphazard over the Commonwealth. If this is taken, then, as any sort of guide to the number of diseased cows in the State, then there are roughly over half of the milk cows in the State that would react to tuberculin.

During the present year the average price actually paid for cattle condemned for tuberculosis has been $35.80 per animal.

The number of meat cattle over one year old assessed in the Commonwealth in 1896, was 212,601, and probably about 17-20 of these were milk cows. It does not require much calculation then to find out that if all cows were tested and all those reacting were killed off, it would cost the State about three and one-half million dollars to pay for the cows killed, not to mention the cost of the executive portion of the work. The authorities in Pennsylvania and elsewhere have placed themselves on record as being of the opinion that from the enormous cost of the work the testing of every cow in their various districts is impractical. Massachusetts is of the same opinion. She believes that the danger to man from bovine tuberculosis can be lessened by the adoption of broader methods in control work. For example, I believe that the entire work would be benefitted both as to expedition and thoroughness if the State was divided up into veterinary districts ; each district in charge of an experienced, qualified veterinarian, who would be responsible to the Commission for his district. He would be responsible for the supervision of herds in his district, and he would be responsible for the slaughter-houses established by the State or city in his district.

It is time, I believe, that the country slaughter-house was done away with. It is time the State took the matter up, and I believe an opportune moment for the change has come. Greater economy must be used in the disposal of carcasses of animals that react to the test, especially as over 90 per cent. of the animals condemned seem to have only localized tuberculosis.

I believe that State slaughter-houses could be established ; that stalls in these slaughter-houses could be rented to local parties. This would greatly simplify the inspection service, and the dirty, filthy country slaughter-house would have to go ; and there would be this further advantage, that in State or municipal slaughter-houses, under a proper system of inspection, much of the meat at present condemned to the rendering tank could safely be used for food. This is a matter that I hope to see taken up and acted on at an early date.

HOW TO PREPARE PRODUCTS FOR SHIPMENT TO THE PATHOLOGICAL LABORATORY.

By James Law, M-R.C.V.S., Director New York State Veterinary College, Ithaca, N. Y.

A Paper read before the New York State Veterinary Medical Society, at Syracuse, Sept. 15, 1897.

The work of a pathological and bacteriological laboratory is often very sadly handicapped by the unsatisfactory condition in which morbid specimens reach it, and it occurs to me that it might establish a better relation between the practitioner who feels his need of laboratory assistance on the one hand and the laboratory expert on the other, if some plain instructions for the preparation and shipment of morbid products were furnished to the former. As specimens are usually received they are too often in a condition which renders them absolutely useless for pathological purposes, or, failing this, they demand such an outlay of time, labor and material in order to trace out the nature of each microbe present that it is prodigal in the last degree to attempt such a work. Many specimens reach the laboratory in a condition of advanced putrefaction, in which it is folly to search for the germ of a specific disease or the features of a definite lesion. Others are smeared with filth from outside the body of the animal and due to contamination by contact with knives, hands, skin, manure, earth, foul water, and other impure sources, so that, even in the absence of advanced sepsis, the multiplicity of bacteria present demands a long and exhaustive investigation before reliable results can be obtained. In other cases the ferment-laden contents of internal organs, such as the stomach or bowels, become mingled with the bacteria which were at first present in the diseased organs, which have been packed with them, rendering bacteriological work tedious and costly, even if possible at all. In still others the sender has taken precautions against the putrefaction of the product by steeping it in strong alcohol, carbolic acid solution or other antiseptic, and has thus effectually prevented any bacteriological cultures of the more delicate disease germs. It would be easy to add to this list of examples of how not to do it, but it will be more profitable to turn to methods by which the sender can place himself in harmony with the subsequent work of the bacteriologist and pathologist.

1st. Select a case in which the disease is fully developed and in active progress. At the outset many infectious diseases are strictly local affections, and the *materies morbi* can at this stage be found only in such local centre, and the internal organs which are the usual seats of affection are still germ free. Again, in the advanced stages of a purely contagious disease the microbe may be no longer present, while the structural changes caused by it and its products are still sufficiently well marked.

2d. In localized infection take the tissues which bear the local lesions.

3d. In selecting tissues which bear the local lesions, take by preference such morbid conditions as are recent yet well developed, and avoid such as have manifestly a complicated infection. It is a common thing to find tubercle, anthrax and other lesions complicated by the presence of pus organisms and other microbes, and in such cases the search for the primary germ of the disease is correspondingly complicated and difficult.

4th. Take the material from a subject which is newly killed or has only died very recently. In certain diseases septic microbes from the skin, bowels or some other mucous surface, or which are already present in the circulating fluids, are propagated with great rapidity, so that in a very few hours specimens are almost useless for examination or cultures. This is especially true of the warm season and southern latitudes.

5th. When the infection is generalized aim at securing one or more parenchymatous organs which are likely to contain an abundance of the pathogenic microbes with few or none of the extraneous or saprophytic ones. As example of such organs may be named the liver, kidney, spleen, lymph glands, heart and lung.

6th. In securing the morbid specimen first clip the hair from the surface of the body where the incision is to be made, then wash it clean with soapsuds, followed by a mercuric chloride solution, 1:500. Wash the hands and disinfect them in the same way. The knife and forceps to be used should be cleansed and placed in, and taken direct from the carbolic acid solution. If greater security is desired they may be dipped in absolute alcohol and burned off.

In case of a superficial local infection the infected part may be seized with the sterilized forceps, cut out with the sterilized knife, and transferred to and wrapped secureiy in a white cloth thoroughly wrung out of the mercuric chloride or carbolic acid solution, care being taken that it is not allowed to come in contact with any other object.

If an internal parenchymatous organ is desired, an incision is made through the skin, along the ventral aspect of the body from the pubis to the sternum, or the chin, and the skin is dissected back on each side. Then with sterilized knife and, if necessary, bone forceps or saw, the abdomen and perhaps the chest are laid open, so as to expose the organ or organs desired; great care must be taken to avoid wounding the stomach or bowels. Then, with sterilized hands the organ may be seized, cut out and wrapped in a cloth wrung firmly out of a sublimate solution, as already advised. It may then be wrapped in paraffin paper, or in extra cloths wrung out of sublimate solution, and packed in a scalded jar, or in a box with cotton batting, salt, sawdust, wheat-bran, or charcoal for shipment. In all cases in which the organ is small (kidneys, lymph glands, pancreas, etc.,) they should be sent uncut and unmutilated. In large animals in the case of the lungs, liver, spleen or other large organs, a portion only will usually be sufficient, choice being made of a diseased portion. The excision of such part must be made with sterilized instruments, and the cut surface may be allowed to bleed, and may then be scraped with a sterilized knife before wrapping.

7th. When it is desired to send liquids like pus, blood, or liquid exudation, wash and disinfect skin, hands and knives, as already prescribed, provide a bottle and cork that have been thoroughly sterilized by boiling, incise the sac or infiltrated organ and receive the liquid into the bottle direct. Cork and seal. A still more accurate method is to provide small glass tubes that have been sterilized by heat, and drawn to a point at each end and hermetically sealed, so that a vacuum is left internally, having disinfected the surface and incised the sac with a sterilized knife, one end of a vacuum tube is pushed into it, and its point is broken off by pressure against the inner surface of the wall of the sac, when it will instantly fill itself with the contained liquid. It is then withdrawn and hermetically sealed in a gas or alcohol flame, or, if nothing better can be had, with melted wax.

8th. To send a portion of diseased intestine, wash it out carefully with boiled water that has been allowed to cool, tie the ends, and enclose in a preserving or other jar, thoroughly sterilized by boiling. If the contents only of the bowels are wanted, they may be placed in a sterilized bottle or jar, and secured with sterilized sealed cork or cover; whenever bottles or jars are used careful packing is necessary to prevent breakage and loss of the material.

9th. In case of a body, which has been opened without any special precaution, and in which lesions suggestive of infection are found, the organ showing the lesions may be washed in a succession of waters that have been boiled and cooled again, and it may then be wrapped in a mercuric chloride cloth, and packed for shipment.

10th. In sending the heart, it is important to retain the blood, and all vessels opening into it should be ligated before wrapping.

Examples of Diseases Affecting the Different Organs.

In the following list, the organ named is likely to be a seat of infection or infestment in the diseases named in connection with it:

Liver.—Anthrax, hog cholera, contagious pneumonia in the horse (brustseuche), omphalo-phlebitis, infectious hepatitis, entero-hepatitis of turkeys, infectious leucæmia in fowls, fowl cholera, Southern cattle fever, hepatic tubercle, actinomycosis, tumors, gall stones, distomatosis, echinococcus, cysticercus, tennicollis, tænia fimbriata, nematodes, etc.

Spleen.—Anthrax, Southern cattle fever, swine plague, hog cholera, contagious pneumonia, splenic tubercle, actinomycosis, sarcoma, carcinoma, glanders, etc.

Kidneys.—Anthrax, infectious nephritis, hog cholera, fowl cholera, Southern cattle fever, pyæmia, septicæmia, calculi, strongylus gigas.

Lungs.—Contagious pneumonia (horse), lung plague (cattle), influenza, contagious broncho-pneumonia (cattle), canine distemper, swine plague, aspergillis, pneumonia (fowls), pulmonary glanders, actinomycosis, anthrax, pulmonary lesions of petechial fever, pulmonary acariasis, pulmonary helminthiasis.

Stomach or Bowels.—Hog cholera, swine plague, fowl cholera, dysentery, contagious diarrhœa and muco-enteritis (Calvisk), milk sickness, intestinal anthrax, tuberculosis, actinomycosis, tumors, parasites, etc.

Lymph Glands.—Anthrax, tuberculosis, glanders, strangles, swine plague, hog cholera.

Brain or Spinal Chord.—Rabies, dourine, cœnurus, cerebrospinal meningitis.

Heart.—Anthrax, milk sickness, swine plague, hog cholera, contagious pneumonia, influenza, petechial fever, ulcerative endocarditis, etc.

Womb, *Fœtal Membranes.*—Contagious abortion, infectious metritis.

Milk.—Contagious mammitis, aphthous fever, milk sickness.

Udder, *Mammæ.*—Contagious mammitis, affecting ducts and follicles, cow pox.

Saliva, *Bronchial Mucous.*—Rabies, contagious pustular stomatitis, aphthous fever.

Jaws, *Buccal Mucosa.*—Thrush, contagious pustula, stomatitis, aphthous fever, pseudo-membranous inflammation, actinomycosis, tumors.

Pharynx.—Anthrax, tuberculosis, pseudo-membranous and infectious inflammations, glanders, etc.

Local Lesions.—In certain diseases the lesions are localized in particular parts or in the seat of inoculation, and such part must be secured, wrapped and shipped with all antiseptic precautions. Thus we have the connective tissue and muscles affected in emphysematous anthrax, malignant œdema, and other infective local inflammations, etc. The skin in cow pox, ringworm, acariasis (mange). In tetanus the bacilli are early or never found except in the seat of the wound.

In all generalized infectious diseases, it is important to ship several diseased organs or parts of organs, rendering the discovery of any pathogenic micro-organism much more probadble.

MAJOR McCANN'S WELCOME TO THE U. S. V. M. A.

Mr. Chairman, Ladies and Gentlemen of the United States Veterinary Medical Association :

It is always a pleasure to me to extend the hospitality of my fellow-citizens and the management of the Tennessee Cenennial and the citizens of the United States, and I assure you hat I feel an extraordinary pleasure in welcoming you within he confines of our State.

There is no animal which confers so many blessings upon mankind as the horse, and I feel happy because I am permitted to address a class of gentlemen whose aim and object in life is not only to relieve his pains, but to release all the penalties to which horse-flesh is subjected.

I have been over fifty years in preparing the *impromptu* peech which I make you to-day.

If there is any subject on earth with which I am more familiar than any other, it is the horse. My earliest recollection s closely associated with the "clothes horse," upon which I used to hang my clothes when I was a child, and one which aved my fingers from many a burning. With what boyish delight did I dwell upon my "rocking horse." He was a "goer" ; you bet he was. Like Alexander the Great, I found hat my bucephalus was afraid of his shadow ; so I turned his head to face the sun, and he couldn't see it. Rarey, the great horse-tamer, wasn't in it with me. I sobered him down so that n less time than it takes lightning to chase a squirrel down a hickory tree, he was not even afraid of the Tom cat. Phillip, he father, immediately said : "Seek, my son, another kingdom ; Macedonia is unworthy to contain thee." Acting upon parental instructions, I struck a bee line for a neighboring tream, where, with dangling line and wriggling red-worm, I hrew tempting bait to the red horse, "roped him in," and oon I found him dangling on my string.

The next thing was the "wood horse." Gee whiz! How sweated and toiled over this fellow ; I had a strong constitution, stood a good deal of rest, and wound up with my head full of "wise saws and modern instances."

The next thing I struck was the "sea-horse." He was more often heard of than seen in public. I never liked him very much, because I am built not to like any fellow who is fond of nothing stronger than water. (*Laughter.*)

Then there is the "horse-fly." I never had much passion for him. He is not easily shaken off. He is a "sticker," from pastern to withers; to be more comprehensive, I will say, from snout to crupper-bone, and sometimes creates a disposition on the part of the horse to walk out from under the saddle and give us a new evidence of the "Fall of Man." (*Applause.*)

Then there is the "old horse," with his mane flowing to the breeze, his tail over the dashboard, splitting the road wide open, and teaching a gazing world that age ain't nothing. "It is blood which tells." How often have I seen the aged veterinarian strike a bee line for a grocery, annihilating distance. Robert J, Hal Pointer, Iroquois, and other quick steppers, were all left in the distance as they passed the grand stand, and amid the shouts of the multitude you saw the veterinarian smile as he took down the purse which contained the price of his fee, and received the congratulations of the horse-owner, as he said, "The veterinarian is a sure winner."

The next fellow is the horse trader, as he came charging down on me for a new deal. I cannot tell you his exact age, as he had worn his teeth off in champing the bit, so eager was he for the fray.

But the slickest one in this land I ever knew was the boy trader. He had a mule which he had trained so that when he touched him on the flank he would immediately sit down. He struck an Englishman one day from across the briny deep, who had come to this country to take him a glorious hunt. As he rode along he met a country boy, and as they sauntered along the lane together, the boy espied a rabbit in the field. He immediately touched his mule in the flank, and the mule sat down. The Englishman asked what was the matter with the mule. The boy replied that he was a "setter" and he was setting the rabbit, and showed the Englishman the rabbit as he scampered away. A short distance further on the boy espied a partridge. He immediately touched the mule on the flank, and down he sat. The Englishman was overjoyed, bantered the boy for a horse trade, and the boy finally got rid of his mule for the Englishman's horse and a hundred dollars to boot. They changed mountings, until a short distance further along they crossed a stream. The Englishman put his spurs into the flanks of the mule and urged him forward, when the mule immediately sat down. Says the Englishman: "What is the matter with him now?" "Oh," says the boy, "he sets just as well for suckers as he does for rabbits and birds." (*Loud Applause.*) In a word, that mule "went all the gaits." And the only reason my fellow citizens seem to have in trotting me out to make addresses of welcome grows out of the fact that I talk to the boys, smile on the girls, and take another kind of smile with the boys. In fact, my tank capacity has been equal to any show which comes our way.

Aside now, gentlemen, from levity, I again welcome you to our city, and desire to say to you that you are monarchs of all you survey, and there is none your right to dispute. If there is anything you want which you do not see, let me know and you shall have it. I am a brother-in-law in the Methodist Church—Dr. Haggard's church—and, therefore, can do no wrong. God bless every one of you. It is just such gatherings as we have to-day which adds to the glow of that spirit of nationality so essential to the nation's prosperity. And while you attend to the business you have in hand, I will take the girls on a trolley ride, and return them all to you in perfect safety. I was born in this Southland, where the first lessons we were taught by our mothers was to take care of the girls, let them have a good time, and show them the elephant, tushes and all. And I know that I shall be amply repaid for my trouble by the sweet music which will flow out from this row of chimes you have brought with you. (*Applause.*) We will now move out, girls, and when we get back you will pronounce a benediction on the trip and say that you have been out with the handsomest "charger on the stretch." (*Laughter.*)

And the members of the press are here—the faithful chroniclers and motive power of all associations, and with whom I have a contract to write all my speeches—will faithfully chronicle all that is done and said in my absence, and I will be sure to keep up with the procession. May Heaven bless you, newspaper boys. They have condoned my faults, and magnified my virtues to such an extent, that while my dear sweet wife don't regard me as a Solomon, she thinks I am no sardine, by a large majority. (*Laughter.*)

We have the lights from the great universities among us today, whose permeating beams will brighten our way through the midnight of gloom and doubt. Guided by our past experiences and aided by such lights as these, how can we fail to succeed in relieving the pain which exists in the forest of the lumbar region of the noble horse. (*Applause.*)

ON THE USE OF BARIUM CHLORIDE.

By A. C. Hassloch, V. S., New York City.

Since Prof. Dieckerhoff, in 1895, recommended the use of barium chloride in the treatment of colic, its value as a therapeutical agent has been discussed *pro* and *con* by veterinarians all over the civilized world. While from many came adverse reports following its use, a few others lauded the new remedy to the skies. Having carefully followed all of Prof. D.'s reports, I determined to institute a thorough investigation of the physiological action of the new agent, and after the use of barium chloride in upwards of 200 cases of colic, have arrived at the following conclusions, viz.: That barium chloride is one of the most valuable remedial agents yet given to the veterinarian, to promptly produce a most vigorous and energetic intestinal peristalsis, so necessary to the relief from colic in our equine patients; that it in no way produces any unpleasant or disastrous after-effects; that a full medicinal dose does not depress either heart or respiration; on the contrary, this agent is a cardiac tonic, and, therefore, is indicated when the heart is weak and irregular. That it may be safely employed whenever a quick purgative is required, and that the adverse criticism accorded it by many veterinarians is the inevitable result of a slight error in the application; namely, the gentlemen, instead of injecting the salt into the jugular vein, inject into the subcutaneous tissue, usually causing a most intense swelling at the point of injection, and no purgative action. Careful inquiry among my fellow-practitioners has satisfied me as to the truth of this assertion, and after having instructed them as to the particular methods of intravenous medication, I am gratified to have them report the same good results experienced by myself. I proceed as follows: First, fill the hypodermic syringe with slightly more than the required amount of the barium solution, I hold the instrument for a few moments in my tightly closed hand, which slightly warms the solution and expels all air (this is very important),—then hand the syringe to an assistant or stable-helper, with instructions to hold it in the same manner while I apply an antiseptic to the part; then, raising up the jugular vein by digital pressure, insert my needle slowly and in a slanting direction into the vessel till I get a free and continuous flow of blood therefrom. Now, while the blood is flowing freely, and after having discharged from the syringe all of the surplus solution, I attach my syringe to the needle and then inject. In this way all air is excluded from the vessel and you are morally certain that the contents of the syringe have been thrown directly into the blood-current and nowhere else.

Try it in this way and you will be well pleased with the result.

In conclusion, I would add a few words on the proper manner of preparing barium chloride solution. The salt must be chemically pure, and should be dissolved in water which has previously been boiled and then allowed to cool. The solution should be carefully filtered twice over, as the first filtrate is apt to contain filaments of the paper, which are removed by a second filtering, through the same paper. The solution must be kept in well-stoppered sterilized bottles, and will keep for a long time. The most convenient strength is 10 grains to the fluid drachm, *i. e.*, 1½ fluid drachms representing 15 grains, approximately 1 grm. of the salt.

REPORTS OF CASES.

A CASE OF AZOTURIA.

By Robert W. Ellis, D. V. S., New York City.

May 29th, 1897, I was called in the evening to a suburban residence to see a family horse, about eleven years old, suffering with azoturia in its first stage. The *usual* history of the horse was given of his standing in for a few days, when he was taken out for a drive, which was soon cut short by the animal's symptoms of general distress, manifested by breaking out in a profuse perspiration, and by his difficulty of locomotion. He was hurried back to the stable as rapidly as circumstances would permit, and I was telegraphed for. On arriving, I found the horse with difficulty maintaining a standing position, and immediately recognizing the case as one of azoturia, I had all the men present (which happened to be three) brace the animal up while I catheterized him, and as soon as they stepped from their positions he went down, where he remained for the next forty-eight hours, although he made repeated efforts to regain his feet, floundering over a considerable area by so doing.

Immediately after drawing the urine, which was of the characteristic appearance peculiar to the disease (although just why it is so does not seem to be at all a settled question) I prescribed the following cathartic drench:

℞	Aloes Barbadensis,	℥ i.
	Powd. zing. rad.,	ʒ i.
	Glycerinum,	fl ℥ i.
	Aqua fervens,	fl O i.

M. Sig. Give at one dose.

I also prescribed the following powders:

℞	Sodii bicarbonatis,	ʒ xxxii.

Fiat Charts No. iv. Sig. One powder immediately after drench, one an hour later, and the remaining two at six-hour intervals, each in a pint of water.

and ordered water *ad libitum*, but positively nothing to eat. The following morning found my patient on broad side and groaning;

after catheterization, however, groaning ceased and animal sat up and picked at bedding. Considerable rumbling of bowels and flatus, with stools of normal consistency, purging did not follow until the cathartic drench was repeated next day, when it was very profuse. I now prescibed the bicarbonate of soda in four-ounce doses every six hours in pint of water as before, and sanmetto (Od Chem. Co.) in one-ounce doses every four hours. This, however, could not be obtained at the country druggists, and consequently was not started until six o'clock that evening, just at the time I returned to pass the catheter to relieve him for the night, when I found him lying very flat on his side and breathing quite heavily. I gave the first dose of sanmetto at six o'clock that evening, which was about twenty hours after time of attack, and ordered it to be given every four hours right through the night; this was continued for the next twenty-four hours, with condition much the same, until when the attendant returned to give him the ten o'clock dose on the second night (just forty-eight hours from the time he went down) he found the horse on his feet, and when I called the following morning, and was about to remove the catheter from my phæton, he informed me that I would not need it, as he had seen the horse perform that function himself all right. The bicarbonate of soda was continued until the end of that day, in conjunction with the sanmetto and the sanmetto continued alone that night as usual, every four hours, when it was ordered to be given in ounce doses three times a day. The symptoms during this time were as follows: After regaining his feet that night, he remained on them until I saw him on the following morning, standing well on three legs, but almost unable to make any movement on account of the entire loss of power of the near hind leg. During that day he was able to lie down and get up moderately well, but the following morning I found him down at eleven o'clock, where he had been since five, unable to regain his feet.

I had him dragged out into the yard in the sun, and lifted to his feet and held there, and his legs rubbed until he could stand on them, which he was able to do in a few minutes. I found, however, that he still had no use of the left hind leg, so I rubbed it *well* with spts. terebinth., and soon found out the leg was not "dead," as he was able to strike the ground with it quite vigorously, and finally he made off, and traveled several yards, although he knuckled badly on both hind legs in doing so, and arriving in high grass, he remained there and rested and fed at intervals. I found him the following morning lying full length on a bed of straw under a shed, from which he rose readily when requested to do so; but this time locomotion was out of the question, due to an affliction of the *right* hind leg, his weight now being supported on the left. I left word for *this* leg to be rubbed with spts. terebinth., and the sanmetto to be continued as before, and in addition, drachm doses of potassii iodide three times a day. The use of the right leg, however, did not return, the horse positively refusing to take a step forward until electricity was applied over the gluteal muscles, which caused him, after putting up with as much of it as he could, to kick at me with the affected member, and when I still persisted with it, to walk away from me; this was repeated the following morning and the animal led to a near-by pasture, where he was allowed to spend several weeks, during which time improvement in the affected leg was steady but gradual, and finally restoration was complete.

The question now arises, as to what the recovery was due,—the bicarbonate of soda, the sanmetto, the iodide of potash, or the electricity? In my opinion, equally to them all. To the bicarbonate of soda as an antacid and neutralizer of the poisonous products generated by effete material endeavoring to leave the system via kidneys and bladder; to the sanmetto as a specific tonic to these consequently overtaxed organs; to the iodide of potash as an absorbent and alterative, thus increasing the means of elimination of the waste products resulting from the general disturbance and temporary suspension of the functions of the urinary apparatus; to the electricity as a stimulant to the circulation over the region of the gluteal muscles, and a tonic to the crural nerve, a partial paralysis of which being said to account for the lingering lameness in one or other of the hind extremities in many cases, as in this one, after the acute symptoms have subsided. The cathartic given preceding these remedies was intended simply to lessen the demand for exit of effete materials through the kidneys, as soon as its action on the bowels could be established. Therefore, it would seem that in a case of azoturia we can follow no other rule than that of treating symptoms, after the two first main indications, to endeavor to neutralize and disperse the poisonous products present at the time our patient shows the symptoms which alarm his driver, and to tone up those organs on which a demand is immediately made for the carrying off of the same, the kidneys. Therefore, bicarbonate of soda and sanmetto respectively.

URETHRAL CALCULUS.

By S. R. HOWARD, V. S., Hillsboro, O.

A few months ago I was called to the farm of James Miner. When about to leave I was asked to wait until a horse was led out for my inspection. Was then asked if I had ever seen the horse before. Looked him over and replied I had not. Was then asked if I had ever seen him *behind* before. Lifting his tail I immediately recognized in him a gelding I had seven years before operated on for urethral calculus; owner, Wm. Roads of this place.

History.—Seven years ago the horse was subject to short and frequent attacks of supposed colic, from which he recovered quickly after being given the usual doses of soda, watermelon seed tea, etc. He would make frequent successful attempts to urinate, especially while being worked. Owner said the horse had become valueless, as they could not plow a round with him and that every half hour or oftener he would stop, stamp, stretch out and urinate a little, lie down, roll in harness, etc., and then shortly appear all right.

Mr. R. wanted some medicine for horse's kidneys. I declined to prescribe and advised him to have the horse examined. This was done and in passing catheter I found an obstruction, which afterward proved to be a very rugged calculus lodged in the bulbous part of the spongy portion of the urethra. Horse weighed about twelve hundred pounds. I cast him and made a good-sized median incision right down onto the obstruction and worked it out with my fingers. It did not seem very adherent. No bleeding to speak of. Washed wound several times per day for a week with antiseptic lotion and did not stitch or otherwise bother it. Passed the catheter once to see if way was clear to bladder. Part of the urine passed out through the incision for about a week and then ceased altogether from that opening. In a few weeks I lost all trace of this horse until several months ago. He is now a sound, useful horse, aged about twelve years, and in good flesh.

I inclose you the calculus, weight two drachms, very ragged, and largest circumference measures three and one-half inches.

TWO CASES OF TYPHOID IN THE HORSE.

By CHAS. W. HEITZMAN, M.D.C., New Orleans, La.

These cases occurred about three months after the animals' importation and after they had recovered from the so-called "acclimating fever." The premonitory symptoms were a lack of usual vigor and an apparent disgust of food. Exhaustion was very marked. Pulse frequent. Temperature 103° F. Excessive thirst. The mucous membrane of the mouth and the tongue dry and covered with a white coat. About the fifth or sixth day the epithelium from these parts began to peel off, leaving red glazed surfaces. At the beginning of the first week constipation was a prominent symptom, but later on a fœtid diarrhœa supervened. There was great tenderness on pressure in the abdominal region and auscultation revealed a gurgling sound. In both cases the patients were disinclined to move, giving evidence of pain when forced to do so. During the second week the soreness seemed to increase, with further disinclination to move; when down it was with difficulty that they were made to arise. The mental condition was decidedly affected, causing an entire oblivion to surroundings. At the end of the second week an eruption appeared, at first being confined to the abdomen, but gradually spreading over the body. The hair dropped as a consequence of this eruption and at the end of the fourth week they were practically bald. The temperature continued to rise, reaching its highest point (105°) on the eighth and twentieth days. The decline of the force of the pulse was well marked, in fact a dicrotic pulse was more present. During the third week remissions in the temperature were noticed. With these remissions a decided change for the better was observed; the trembling of the muscles, especially of the foreparts, disappeared, with it the diarrhœa. Appetite returned. The denuded patches in the mouth and on the tongue healing, and at the end of thirty-three days they were discharged as well. However, they did not get a full coat of hair until several weeks later.

Treatment.—Acid boracic, fl. ext. belladonna fol., and whisky, with daily baths of a solution of the sulphite of soda. The diarrhœa in one of the cases became so alarming that treatment in the shape of spts. ammon. arom., acid tannic and glycerine was directed towards it with beneficial results. This mixture was discontinued after a few days. The boracic acid in addition to being given internally was made into a mass with honey and applied to the denuded patches in the mouth.

RUPTURE OF THE LIVER.

By W. J. MARTIN, V. S., Kankakee, Ill.

On August 27 of this year, I was called to see a black gelding, aged six years, weighing 1500 pounds, and used for trucking purposes by a wholesale grocery firm of this city. The horse was first noticed to be sick at 4 P. M., and I saw him half an hour later. At noon he had eaten his usual feed, and was to all appearances in perfect health. At the time of my examination the horse was still hitched with his mate to the truck. He presented the following symptoms: Pulse quick and weak (70 per minute), mucous membrane of a pale blanched color, ears cold and hanging pendulous, head hanging down in a listless manner, lower lip pendulous, legs and body very cold, temperature in rectum 101½° F., respiration slightly above normal. Frequent attacks of dyspnœa with reeling gait when the animal was made to move backward or his head was raised higher than the natural position. Not the slightest abdominal pain was shown by the animal, nor was there any perspiration present on any part of the body.

When placed in his stall the horse would eat at times a small amount of hay, between the attacks of dyspnœa, which would come on every few minutes.

Diagnosis: Internal hæmorrhage from some large organ.

Prognosis: Death. Took place some time during the night.

Post-mortem: August 28, 10 A. M. Body well nourished; in fact, very fat. On removing the skin from the body the subcutaneous tissues were seen to be stained a deep yellow color. This staining was most apparent over the loins and hind limbs. On opening the abdominal cavity a rush of blood took place, in such an enormous quantity that it appeared as if the horse had bled to death into his own abdomen. This was just what had happened. On the lower borders of both the right and left lobes of the liver were large rents, extending through the outer serous covering, Glisson's capsule, and nearly through the parenchyma of the gland. The entire portion of the liver above the rupture was of a dark red color, smooth to the touch and very dense in structure the external covering of the gland, Glisson's capsule, was of a tough leathery nature. On section of the liver numerous white spots were visible around the margins of the hepatic lobules, presenting that well-known appearance known as "nutmeg" liver. The parenchymatous structure of the liver was soft and easily broken down on pressure with the fingers. The portal vein was filled with a gelatinous plug of serum. The other bloodvessels of the gland were partly filled with coagulated blood of a dark brown color.

No cicatrix of previous rupture of small bloodvessels or of perihepatitis of the organ were to be seen upon the external surface of the liver.

The liver was greatly enlarged, both in circumference and diameter, and weighed forty-two pounds.

The kidneys were much enlarged and of a dark red color, due, no doubt, to blood extravasation. Their structure was also soft and easily broken down under pressure. The abdominal parietes were covered by a thick layer of adipose tissue. The heart was large, though not abnormally so, and each ventricle was contracted and contained a small amount of dark coagulated blood.

The lungs were of a pale anæmic color, due, no doubt, to the thorough drawing out of the blood from their tissues. The bronchi were partly filled with frothy mucous.

The spleen was much enlarged and engorged with blood of a dark brown color.

The intestines were normal, with the exception of the mesentery and omentum being abnormally covered with fat.

The flesh of the body was almost bloodless and of a firm consistency, so much so as to cause comment from a butcher, who was standing by, he remarking that the flesh was as free from blood as that of any beef he had ever seen bled to death.

This horse had been lightly worked nearly every day during the past two years. During this time although highly fed, he was never known to have been sick. The horse had not been subjected to any unusual exertion previous to the fatal attack ; in fact, the horse at the time he was first noticed to be ill had been standing for some time waiting for a load of goods. He could not have been kicked by his mate in the stable, as each horse stood in a separate stall with several unused stalls between them. It would appear as if the liver, which had been gradually enlarging for a long time, had finally reached the limit of its distension and consolidation, and spontaneously its parenchymatous structure gave way under the great strain it had been so long subjected to.

What seems most surprising in this case was the entire absence of all abdominal pain and sweating, two symptoms that have hitherto been considered classical by veterinary authors in rupture of the liver.

THE SPERMATIC CORD TWISTED AROUND THE COLON.

By A. F. ABBOTT, D.V.S., Manchester, N. H.

At noon on Sept. 10th a bay gelding, weighing about 1050 pounds, and used in one of the livery stables here, was attacked with colic. He apparently responded to treatment satisfactorily, but later was again seized with pain, and continued so until 9 A. M. of 12th he died. At first the symptoms were those of acute indigestion; followed by quick and feeble heart action, and later no pulse, cold sweat and very anxious expression. During this time nothing passed his bowels, although repeated attempts at defecation were made.

On post-mortem examination I found slight general peritonitis, contents of small intestines and cæcum semi-fluid and that of the colons rather dry. I was beginning to think I might have done better with the case, when about four or five feet from the anus I found the colon had formed a loop, involving about two and a half feet and at the neck of the loop the cord of the concealed testicle had wound around the colon, making one and one-half turns, and had been pulled so tightly that it was impossible to untie it, the tissues around, of course, being indurated. The portion forming the loop was black in color, very friable, and the mesentery was one-half inch in thickness.

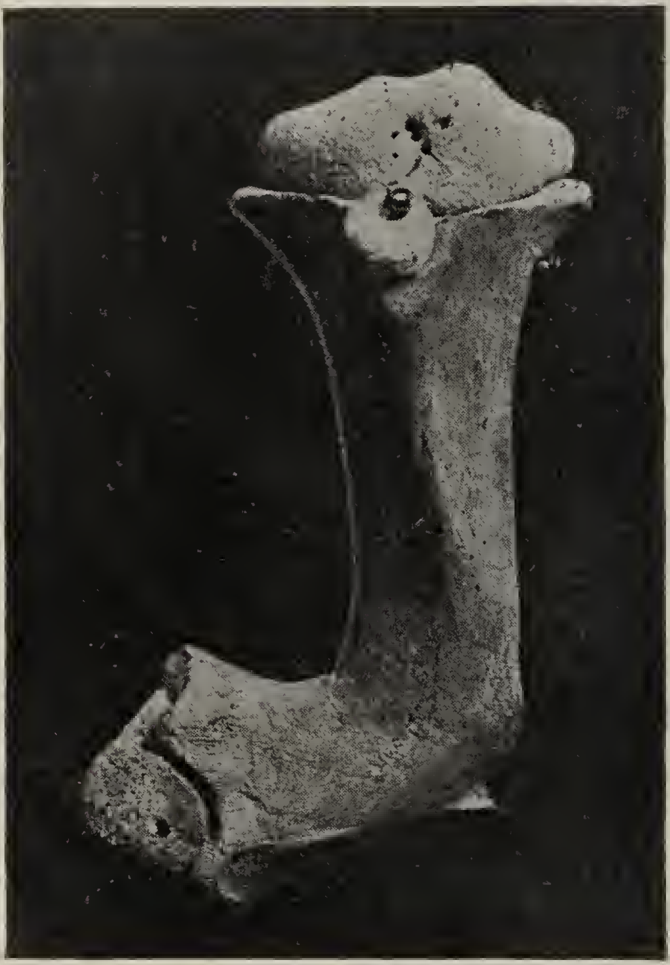
HERNIA OF THE SMALL INTESTINES THROUGH THE MESENTERY.

By R. C. JENKS, D. V. S., Brooklyn, N. Y.

A trotting-bred gelding, about twelve years old, returned to his stable on the evening of October 14th from a moderate drive on the Boulevard, and immediately upon being unhooked from the road-wagon began to paw and show uneasiness, which rapidly developed into sufficient pain to cause the owner to regard the symptoms as indicative of severe colic. When I arrived, an hour later, the patient was in excruciating distress, with no evidences of fermentation, there being but little tympany. The pulse was small and rapid, rectal temperature normal, and pain continuous. Chloral hydrate was administered in the dose of one ounce, which gave little or no relief, and half the quantity was repeated in an hour, which acted with unusual force, the animal remaining in the recumbent position, the pulse dropping to twenty beats per minute, and with repeated takings the thermic measurement was only 94 degrees Fahrenheit. From out of this condition he emerged in the course of a couple of hours, but the pain remained as before, the pulse becoming more rapid, straining as with an intense desire to defecate well marked, but no fæces were voided except the contents of the rectum and posterior portion of the floating colon. Linseed oil, by the mouth, enemas of opiumized warm soap-suds, and anodynes internally constituted the treatment. Death occurred on the night of the 15th, and the post-mortem on the morning of the 16th revealed the following condition : About two feet of the small intestines had herniaed a ragged tear in the mesentery, and the gut was firmly constricted at each extremity of the loop, the confined portion being entirely strangulated and black from congestion, which had greatly thickened its walls.

FRACTURE IN UTERO.

By H. D. Fenimore, D. V. S., Knoxville, Tenn.



A cow, well advanced in gestation, showed evidence of having been hurt without traces of external injuries. She soon recovered with restorative treatment. About one month later was called to the same cow, suffering with a case of fœtal distokia. The calf was delivered alive, but its right hind leg was bent out at right angle, near the lower third of the tibia, and a sharp spicula of bone was protruding through the skin on the inside. Boiling the bone separated the centres of ossification. The diaphysis showed positive evidence of green-stick fracture of the tibia, which had healed in this distorted condition in utero.

Anthrax in Hides Imported from China.—Washington, Sept. 20.—Acting Secretary Spaulding has written the State Department requesting that our Consuls abroad be instructed to refuse authentication of invoices of hides of neat cattle from districts in which the cattle disease anthrax is known to exist. This action is taken at the request of the Secretary of Agriculture and in view of the fact that an outbreak of anthrax has occurred at Falls Creek, Pa., resulting in the death of animals and human beings in consequence of the manipulation in tanneries of that place of hides imported from China.

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By W. V. Bieser, D. V. S., New York City.

Eclampsia in a Bitch [*Lellman*].—A female Scotch terrier, four years old, in good condition, was brought to me with the history of having fallen over two hours before without being able to rise again. The conjunctiva and visible mucous membranes were congested, pulse small and 150 to the minute, rectal temperature 109 3-5° F., bodily surface very hot. Never having had a temperature of this kind, I took a second thermometric measurement with another reliable instrument, with the same result. Respiration was enormously rapid, 120 per minute. On opening the mouth and pulling forth the tongue, there was nothing abnormal with the digestive system; cold water was ravenously licked up upon presentation; the mammæ were markedly filled, and a tenacious milky fluid could be expressed. The bitch had given birth four weeks previously to five puppies. Facial expression betrayed great anxiety; sensibility was unaltered; pupils were dilated. All four extremities were extended and gave evidences of tonic contractions of the muscles thereof. An enema of four grains of chloral hydrate and cold packs for the hyperpyrexia were ordered, whereupon the temperature fell to 104° F. in a short time and the animal fell asleep as a result of the working of the chloral hydrate. Next day the patient was discharged cured of the eclampsia. L. reports this case because of the rarity of hyperpyrexia as a symptom of eclampsia. It seemed to L. to be due to the irritation of the thermo-cortical centres induced by the physical excitement. Measurement of temperature in all cases of eclampsia ought therefore to receive more attention than heretofore.—(*Berl. Thierärzt. Woch.*)

Bronchial Croup in the Ox.—An ox, one and-a-half years old, gave the following symptoms: A marked cough of barking character, which was very painful; pulse and respiration were accelerated; respiration was labored, the pulse hardly perceptible; the laryngeal region was very sensitive. Auscultation gave rude vesicular breathing. A few days later during a severe spasm of coughing the animal coughed up a fibrinous cast having the exact shape of a large bronchus with its immediate ramifications. Thereupon the animal improved markedly.

Treatment consisted of steam inhalations and bodily friction.—(*Berl. Thierärzt. Woch.*)

THE TREATMENT OF LUMBAGO GRAVIS OF THE HORSE WITH SODIUM BICARBONATE.—According to Prof. D.'s directions, I had occasion to use the remedy in three severe cases of lumbago in horses. The horses held their loins rigid, were afraid to move them in the least on account of the pain; there was congestion of the mucous membranes; urine was very dark and scanty. Two of the horses lay very still; one remained standing, but dreaded to swerve in the least particular. One received an injection of eserin (0.1), the other two an aloes pill of 40 g. each. This was followed up by two hourly and later three hourly doses of 75 g. of sodium bicarbonate, day and night, with the result that one animal could rise again in eighteen hours after taking eight doses in all of the salt. Another rose in twenty-four hours after ten doses of the salt, while the last required thirty doses of the remedy before it could move again, viz., three and one-half days.—(*Berl. Thierärzt. Woch.*)

A WARNING AGAINST KOCH'S NEW TUBERCULIN.—Dencke, Maczewski, and Logucki published simultaneously in the *Medical Press* and *Therapeutical Wochenschrift* a warning against Koch's new tuberculin. They found pneumococci, staphylococci, streptococci in various preparations issued by the "Höchster Fabrik." They were induced to search for germs in the preparations from the fact that after three injections each of 1-500 mgr. of the remedy in a case of apex catarrh and tubercular laryngitis, very threatening symptoms were induced. The germs above mentioned were found in all three vials used for the injections.—(*Berl. Thierärzt. Woch.*)

FRENCH REVIEW.

RUPTURE OF THE ANTERIOR VENA CAVA IN A HORSE.—This is probably the first case on record of such an accident, as recorded by Mr. C. Lesbre, who relates it in the *Journal of Zoötechnie.* An old horse, 19 years of age, at light work, trotting slowly, falls and in less than five minutes dies. At the post-mortem, the lesions found consisted of a large effusion of blood (15 to 20 litres) in the chest, with large fibrinous clots. The anterior mediastinum presents a triangular laceration and the blood coagulated between the layers gives it the aspect of a broad clot. This hæmorrhage has taken place through a slit of the anterior vena cava, on its inferior face, measuring some 6 centimetres in length. The edges of the slit are sharp, as having been made with a sharp instrument. The walls of the vessels and the heart, carefully examined, showed no pathological alterations. The true cause of such a lesion failed to attract the attention of the author, who is inclined to attribute it to organic functional disturbance of the auriculo-ventricular opening of the right heart.

PAROTID SALIVARY CALCULI.—Mr. Massot suggests a slight modification in the general *modus operandi* practiced for their extraction from the duct of Stenon. He makes quite a large incision on the superior part of the canal and above the calculus, which he then pushes back towards the gland and towards the incisions he has made. When the stone is extracted the wound is closed by pine suture and dressed with carbolized white lotion. He has obtained three successes in ten days by the process.—(*Journal de Zoötechnie.*)

EPIZOÖTIC CEREBRO-SPINAL MENINGITIS OF OVINES [*By MM. Savigni and Leblanc.*].—Under this name the authors describe in the *Journal de Zoötechnie* an affection of ovines which they consider is yet comparatively imperfectly known, and, while they consider it as infectious, they are not yet positive as to the nature and causes of its appearance. Distinct from all other diseases, it is characterized by a series of somewhat specific symptoms, which are described as follows: "Nothing abnormal indicates the development of the disease, the appetite is still good, but the external appearance of the animal is slightly modified; he seems to move lazily and remains lying down longer than usual. After two or three days there are prominent symptoms, sometimes movements of the jaws, which often last until death. When food is presented, the patient rises, pushes his head in it, but takes none: he remains immobile in that position until the meal of his mates is over. The respiration is slightly accelerated. These manifestations last five or six days, then the paresis of the hind leg appears and with it difficulty of sight. The patients push to the wall, walk bunking against it or against anything that may be in the barn: they drop and remain lying, constantly moving the jaws as if they were chewing a food which they do not swallow. Sometimes the symptoms of locomotion are the only ones present, and the animal can neither get up or stand up. At the outset, defecation is normal. The urine is very rich in urea and contains a noticeable quantity of albumen. There is fever and the temperature rises to 40. 3° C. Death occurs towards the eighth, tenth, or twelfth day, by collapse." The prognosis of the disease is always serious; the author has observed a mortality of nearly 50 per cent. Hygienic measures form the principal basis of the treatment.

TRACHEOTOMY TUBE IN THE TRACHEA—SECOND OPERATION.—The danger of the possibility of a tube falling into the trachea after the operation of tracheotomy is one which has necessitated greater care and solidity in the making of these tubes, and even with those accidents will occur by the breaking of the instrument, and separation of the cervical plate from the tracheal canula, which drops them, more or less, down in the cartilaginous canal. In the *Revue Veterinaire* Mr. Babeau relates a similar case, where an animal operated upon and almost convalescent, broke his tube and "swallowed" it. Failing to have it coughed out by pressure on the upper part of the trachea, or to take hold of it with forceps, a second tracheotomy imposed itself, as the animal was rapidly choking. It was performed, and the tube removed. A great deal of hæmorrhage accompanied the operation. It was arrested by warm lotions. With a new tube in the first wound, the animal was easily brought to recovery and able to resume work.

DIAPHRAGMATIC HERNIA IN A HORSE [*By Mr. Roy*].—This is an addition to the quite large series of similar affections which, however, brings another evidence to the congenital nature of many cases, consisting as they do in a want of embryonic development and incomplete union between the aponeurotic and the muscular portions of the diaphragm. The animal, a 15-year-old army horse, had been taken with colic several times, and ultimately died in one of those attacks. During these last he assumed most singular and characteristic positions, at times stretching himself with hind legs extending backwards to their utmost, and his chest almost resting on the ground; or, again, sitting on his haunches (dog fashion). This last position seemed to give him most relief. At the post-mortem a large piece of the intestines was found in the thorax, which it had penetrated through an orifice in the diaphragm, situated at the separation of the muscular and aponeurotic portion, in the lower end of the diaphragm, on its right; its diameter was about that of a silver dollar; its borders were organized, thick, fibrous, hard, solid and smooth.—(*Rev. Veter.*)

EXOSTOSIS OF THE LEFT SIDE OF THE FACE.—This interesting case is obtained from the clinic of Prof. Peuch and recorded in the *Journal of Zoötechnie* by one of his students, Mr. Quevillon. A mare, eleven years old, had had on the left side of the face a growth which had existed for the last six months. It was situated a little in front and above the maxillary spine, opposite the three first molars. It was hard, not warm, without œdema, round, and not abnormally sensitive. The skin was not adherent to it. It extended into the nasal cavity of that side, as the finger could scarcely be introduced between it and the septum nasi. There was no disease of the mouth, nor of the teeth. The breath was sweet, mastication and deglutition normal. The sinuses presented nothing particular, no discharge. Respiration was regular ; quite well-marked roaring was heard after short exercise. Maxillary glands not swollen. The ablation of the tumor presenting too serious objections, cauterization was resorted to for treatment. It consisted in the application of fine, penetrating points, passed three times in the dots of the central part of the tumor, followed by objective cauterization all over the tumor to increase the effects of the ignipuncture. After some time, applications of biniodide of mercury ointment were made. The result was satisfactory ; the tumor diminished ; the roaring was almost all gone ; the mare was on the road to recovery.

ITALIAN REVIEW.

SUCCESSFUL ŒSOPHAGOTOMY.—The great advantage of careful antiseptic measures is illustrated in the case recorded by Dr. Giovanni Landi in the *Clinica Veterinaria* of an operation of œsophagotomy performed upon a horse which presented the known symptoms of choking. After explorations with the probang and failing to dislodge the foreign body, he decided to operate. The parts were shaved, washed with solution of corrosive sublimate, the tissues were divided in the usual way, the œsophagus exposed, and the foreign substance (a piece of turnip as big as an apple) was removed. The inner surface was then washed with sterilized water ; the mucous membrane was first sewn up with sterilized catgut, then the muscular coat disinfected with solution of sublimate, and suture of the skin. The parts were once more carefully disinfected and covered with a dressing of collodion and iodoform. The first days following the animal received food by rectum only—milk, eggs and flour. There was no febrile reaction, only a slight tumefaction at the seat of the operation. The entire wound was completely healed by first intention nine days after the operation.

LARGE RECTAL ABSCESS.—The surgical clinic at Milan brought before Prof. N. Lanzilotti-Buonsanti an animal which had been sold as being affected with an internal abscess. Itwas evident that his trouble had lasted for some long time, as he was considerably emaciated, the visible mucous membranes were pale, his coat staring, pulse frequent, soft and weak, respiration frequent, features contracted, temperature 39. 5° C. As the symptoms indicated trouble within the pelvic cavity, rectal ex amina tion was made, not without difficulty and pain to the animal; it revealed on the inferior wall of the rectum a large mass, very painful, of the size of a young boy's head, which almost closed the rectal cavity. In front of that the fæces were packed hard- and dried, and were removed with difficulty. In that part of the rectum the mucous membrane was much inflamed, and covered with a semi-fluid mixture of mucous, fibrine and pus. The rectum emptied, it was thoroughly washed with sublimate solution, a small puncture made in the part of the abscess nearest to the anus, about one and a half litres of pus were extracted, which, though of good aspect, had a marked necrotic odor. The puncture was made large enough to receive a drainage tube made with a catheter introduced in the cavity and held in position with a stitch or suture. The abscess was thoroughly washed with antiseptic solution. After a few days, in exploring the parts, two necrotic masses were detected and removed, resulting from mortification of portions of the muscular coat of the rectum. From this moment the cavity of the abscess rapidly diminished in size, the condition of the animal improved; his recovery took place in fourteen days from the date he was operated upon.—(*Clinica Veterinaria.*).

VOLUMINOUS CONNECTIVOMA IN A DOG.—A setter had received some five months before a heavy bruise on the middle of the rump and now presented a tumor the size of a child's head, neither hot nor cold, rather puffy to the touch, not very movable on account of the base, which was large and seemed to depend from the connective tissue underneath. After an injection of a solution of muriate of morphia, two curved incisions were made, involving the base of the tumor, meeting together at their extremities, and circumscribing an elliptic piece of skin, which was left adhered to the neoplasm. The tumor was dissected and removed with comparatively small hæmorrhage. Drainage was applied and the edges of the skin brought together and the wound protected by antiseptic supporting bandage. Irrigations of solutions of sublimate were applied frequently, and cicatrization took place by first intention. The tumor weighed two pounds, and consisted of young new connective tissue, with some coagulated blood. Evidently the lesion was at first an hæmatoma which had slowly been transformed into a true connectivoma.—(*Clinica Veter.*)

COLD ABSCESSES OF THE MASTOIDO-HUMERALIS.—As a modification to the old and classical mode of treatment of cold abscesses of the neck, viz., the exploration of the growth, followed by deep puncture and cauterization with the actual cautery, Prof. N. Lanzillotti-Buonsanti records the success which he has obtained in the treatment of four cases, three of which were operated on by direct free incision upon the whole extent of the tumor, down to the centre of the abscess, with the direct extirpation of all the tissues infiltrated, until healthy structure is reached. The wound being afterward closed with a drainage tube in position for disinfection. One of these patients developed azoturia a very short time after the operation and was treated according to Dieckerhoff's method, viz., the administration of bicarbonate of soda, which he received in doses from 10 to 16 ounces three times a day. These three patients recovered from their abscesses in about two weeks.

PREVENTION OF SPLENETIC FEVER.

To The Breeder's Gazette:

The communication of one of your readers, Mr. Price, of Oxford, Miss., addressed to Secretary Wilson, has been referred to this bureau for reply. He states that he has made earnest effort to acclimate Shorthorn cattle in his county during the past two years, but has so far failed to find a way to prevent splenetic fever among them or to cure the disease when it appears, and requests such information as the department is able to give in regard to this subject.

The cure of Texas fever, especially with beef breeds or with cows in milk, is a very difficult matter. In fact medicines appear to have very little, if any, effect on the course of the disease with such animals. The only hope, therefore, is in prevention. In taking animals to the South it is found that young animals, six months to a year old, resist the disease much better than the older ones. Some breeders have succeeded in acclimating a herd of breeding Short-horn cattle by taking calves to the South and building up their herd from those which live. The losses, however, are generally quite heavy. It has been found by the experiments of this bureau that animals may be inoculated and afterward taken into the infected district without much danger. Our experiments have not been very extensive, but of eleven inoculated cattle taken into the infected district all lived, while of five that were not inoculated four died and the fifth barely recovered. This inoculation should be practiced about November at the animals' home in the North. It is made by injecting under the skin from 8 to 10 c. c. (from two to two and a half drams) of the blood of an animal from the infected district. This causes a mild attack of fever, but the animals soon recover and then have considerable immunity. Of course in selecting the animal from which the blood is drawn for inoculating purposes we should know that it was from the infected district and that it had been infested with ticks. Otherwise it might have come from some section that was not infected, in which case its blood would be of no use for inoculating purposes. Once having secured such an animal it may be retained indefinitely, as the blood seems to retain the virulence during the life of the animal. The inoculated cattle should not be sent South until they have fully recovered, that is, not until two or three months have elapsed. I have no doubt but that this method will prove successful in making cattle sufficiently insusceptible to splenetic fever to permit their being taken to the infected district with comparatively small loss. The experiments have not yet been conducted on a very large scale, and the method may no doubt be made more perfect in the future, but sufficient has been done to indicate its usefulness.

One of the best substances which has been tested for destroying ticks on the skin of cattle is the petroleum product known as paraffine or lubricating oil. It kills the ticks without causing much irritation of the skin. If this oil cannot be obtained cotton-seed oil or lard oil or sulphur ointment may be used, and if applied often enough will keep the cattle free from the parasites.

D. E. SALMON.

UNITED STATES DEPARTMENT OF AGRICULTURE.

WILL WEAR STRIPES.

DR. SIX, THE NOTORIOUS BIGAMIST, SENTENCED TO CHESTER PENITENTIARY.

Springfield, Ill., Oct. 6, 1897.—Dr. William Six pleaded guilty, in the Sangamon circuit court, to the charge of bigamy, and was given an indefinite sentence, under the new law, to Chester penitentiary.

The complaint was made by James Hornung, brother of Miss Katie Hornung, of Beery, Ill., his latest victim, whom he married last spring when he had ten other undivorced wives living in various cities of Indiana, Missouri, Kansas, Oklahoma and Texas. Miss Hornung, with an unaccountable infatuation, stuck to Six to the last. He is a veterinary surgeon, about 40 years old, and fairly good looking.

> "Let still the woman take
> An elder than herself; so wears she to him,
> So sways she level in her husband's heart.
> For, boys, however we do praise ourselves,
> Our fancies are more giddy and unfirm,
> More longing, wavering, sooner lost and won,
> Than woman's are."

S. R. H.

CORRESPONDENCE.

AS TO THE TREATMENT OF EVERSION OF THE UTERUS.

TAMPA, FLA., Sept. 22, 1897.

Editors American Veterinary Review :

In your March number I see an article by Dr. John Minchin, of Goshen, N. Y., entitled "Inversion of the Uterus—Amputation by a Novice—Recovery." I am first impressed with the belief that our Northern doctor meant "eversion" instead of "inversion," and, further, if he had given her the following treatment he would not have been subjected to the ignominious defeat of a "recovery by a novice." In the first place, should the everted mass have been sufficient to fill a half-bushel measure, and the patient absolutely unable to regain her feet, —provided she was prostrated, and, if the above condition was present, the patient most likely would be—the treatment would be first to sling the animal, giving while the slings were being prepared a strong anodyne and stimulant, without narcotic influences. Then, having previously prepared a quantity of tepid water, thoroughly impregnated with the acme of all reliable antiseptics, creolin, cleanse the parts *thoroughly ;* force the mass forward into its normal position ; pour into the cavity two ounces tincture of opium, and, if continued straining be present, insert a nice clean sponge, perfectly aseptic, and take through the labial lips a sufficient number of deep-seated sutures to retain the mass. For the next two days irrigate with tepid creolin solution without disturbing the stitches. The patient will come out O K.

This is my experience in a southern climate, yet the long and hot summers are against success in such cases; and if I am successful here, my brethren in New York should never fail.

Write often, brother, we need this to give us information and activity. Yours very truly.

N. B. RHODES.

P. S.—It may be necessary to have two or three assistants to hold this mass up to the required height; and, if this be necessary, insist upon it; let two men, one on either side, with the end of a towel, hold the mass up to and, if necessary, above the cavity, and you can with exertion, force the uterus back. *Do not fail for the want of assistauce.*

OBITUARY.

DR. WILLIAM HEYSER HARBAUGH died at his residence in Richmond, Va., at 11.30 P. M. on Tuesday, Oct. 12th. He had been suffering from consumption for more than a year and confined to his bed since June 24th, 1897.

He started for a drive on the Saturday previous to his death, but was overcome by exhaustion and had to return to his bed. He grew rapidly worse from that time until the hour of his death, which was very peaceful.

He was born in Cumberland, Md., on Feb. 19th, 1857, and received his early education at private schools and St. Vincent's College in Pennsylvania, and his professional education at the Ontario Veterinary College and University of Toronto, graduating with honors from the former institution in 1885.

He located in Richmond in the fall of 1885, being the first graduate to practice in the State. He met with immediate success, having previous to his illness a very lucrative practice. In 1886, he was appointed inspector of the Bureau of Animal Industry, with special duty, *i. e.*, to investigate the nature and cause of "staggers," which was, at that time, prevalent in eastern Virginia and North Carolina.

He is the author of the chapter on diseases of the respiratory organs in the "Special Report on the Diseases of the Horse," and the chapters on diseases of the heart and blood vessels and diseases of the nervous system in the "Special Report on Diseases of Cattle" published by the Department of Agri culture in 1890 and 1892 respectively. He was also the author of numerous articles for veterinary and agricultural journals. Deceased was the recognized head of his profession in Virginia, and it was through his influence and ability that the State association was organized and chartered, and later that the law regulating the practice of the profession in that State and constituting the State Board of Examiners was passed.

He was the first President of the State Association, holding said office for two terms, and was a member of the Examining Board at the time of his death.

Dr. Harbaugh was a man popular with all classes of people, a skilled veterinarian, an able writer, and he could not have been more conscientious in his work than he was. He was a thoroughly honorable man and one who will be missed, not only by the veterinarians of Virginia, but by the profession as a whole. He leaves a family, consisting of his wife, two daughters and a son; also his mother, brother and sister.

T. M. SWEENY.

EDWARD LOOMES, V. S.—On Thursday, Sept. 30, at his residence in New York City, this well-known veterinarian died of gastric carcinoma, from which he had suffered for only a short time. He was a charter member of the Veterinary Medical Association of New York County, which passed resolutions of regret and condolence at its meeting on the 6th ult., and which will be found in another part of this month's REVIEW. He enjoyed a large practice, and was about forty-five years old.

JAMES JOHNSTONE, D. V. S., of Newburgh, N. Y., a graduate of the American Veterinary College, class of 1889, died suddenly in that city on Oct. 12, of cerebral hæmorrhage.

SOCIETY MEETINGS.

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

The eighth annual meeting of this society convened in the assembly room of the Vanderbilt, Syracuse, New York, September 14, 1897, at 11 A. M.

As neither the President nor Vice-President were present, Doctor Roscoe R. Bell, of Brooklyn, N. Y., was chosen President *pro tem.*, who offered a few remarks in expression of his appreciation of the courtesy the members had shown in asking him to preside over the deliberations of the society.

On roll-call, the following were present: E. F. Bettinger, J. A. Bell, R. R. Bell, W. L. Baker, H. E. Clark, J. M. Currie, Charles Cowie, W. S. Corlis, E. M. Casey, G. C. Dean, H. D. Gill, M. Henderson, Wilson Huff, V. L. James, F. L. Kilborne,

G. C. Kelser, W. H. Kelly, James Law, V. A. Moore, F. Morrow, C. D. Morris, J. A. McCrank, Arthur O'Shea, Thomas O'Dea, R. Perkins, M. M. Poucher, W. H. Pendry, J. A. Pendergast, J. L. Ronan, W. B. Switzer, A. G. Wicks.

The record of the previous meeting was read and submitted for corrections; there being no errors, it was accepted and ordered spread on the minutes. The Secretary then gave his annual report, which was an exhibit of the work of the office, the finances of the society, and the growth of the profession in the State, as it relates to both physical and literary achievement.

The Board of Censors reported on the following applications for membership favorably: Charles F. Ebner, Syracuse; E. F. Bettinger, Chittenango; E. M. Casey, Oxford; H. E. Clark, Newburgh; F. L. Kilborne, Kelloggsville, and George Eighmy, North Chatham; and recommended the following on the application of John P. O'Leary, vouched for by Drs. Hinkley and Willyoung: "Inasmuch as this application comes down to us without action from a previous Board of Censors, and that the facts that led to their laying it on the table are not before us, we recommend that action be delayed for further investigation." The Board further recommended that the society accept the resignation of J. H. Ferster, of New York City, and to hold over the resignation of Herbert Neher, of New York City, on the ground of his indebtedness to the society. Report of the Board of Censors was accepted. A motion prevailed that the Secretary cast an affirmative ballot for the applicants favorably reported.

A motion to adjourn for lunch was carried.

Afternoon Session.—Meeting convened at 1:30 P. M. The newly-elected members were introduced to the sitting members of the society with a few well-chosen remarks by Dr. R. R. Bell, the presiding officer, assuring them of the fraternal feeling on the part of the society in their behalf, and that in their new social relations to the profession, much would be expected of them.

The reports of the various committees were in order on the programme. The Executive Committee had nothing to report. By-Laws Committee reported on the amendment to amend Article VIII, Chapter 1, in relation to annual dues, so as to read, "The dues shall be three dollars ($3.00) per annum, payable in advance." The amendment to raise the annual dues from $2 to $3 per annum was strongly opposed by Drs. Law, Gill and Switzer. The question being called, the vote resulted in favor of the negative, twenty to five.

The second amendment to Article VIII, Chapter 1, was carried by unanimous consent, which relates to the initiation fee and annual dues accompanying the application of future candidates. If such applicant is accepted, such fees and dues to be appropriated to the use of the society. If rejected, the money to be refunded.

The reports by the county secretaries were both interesting and instructive. The reports show plainly that the society has inaugurated a movement in behalf of sanitary work, which is producing excellent results. Several local boards of health now employ a veterinarian, whose duty is to inspect the meat and milk supply of his neighborhood or district.

The Committee on Legislation, through its Chairman, Dr. Kelly, rendered a full report of work done during the last session of the Legislature. This report was accepted. A supplementary report of this work was submitted by Prof. Law, a member of the Legislative Committee, which report dealt with matters pertaining to the Public Health Department of the State, and its relation to the Tuberculosis Commission, with a suggestion that inasmuch as the Departments of Health and Agriculture could not agree on matters supporting the Tuberculosis Commission, that a new commission be formed, composed of three men, namely, the Secretary of the State Board of Health, the Commissioner of Agriculture and the Director of the New York State Veterinary College. In support of this compromise, it was shown by Drs. Law, Kelly and Morris, that such a commission would represent all interests and harmonize whatever feeling that exists in these two departments towards each other, in support of a great sanitary work, and that in the end the public would reap the greatest benefit. This feature of Prof. Law's report brought forth a vigorous protest from Drs. Gill and Bell, each representing respectively the veterinary schools of New York City. Their argument was that such a measure ignored the pioneer veterinary colleges of the State, and that the tendency at the State College (through the Director) was to centralize the function of the veterinary profession throughout the State in the interests of the State College. After some further discussion of the matter, the question was ordered to be laid on the table.

Reading of professional papers being in order, Prof. Law gave a very instructive paper on "How to Prepare Contagious Products for Shipment to the Pathological Laboratory."* The information this paper imparted on that subject outlined the essentials necessary to successfully prepare and ship to the laboratory any pathological specimen. To the painstaking and inquiring veterinarian, this paper is of great value.

---

* Printed elsewhere in this number.

Dr. V. A. Moore, of the State College, read a paper entitled, "Poisoning by Carbonate of Soda a Cause of Death among Swill-fed Hogs," and also, with the aid of charts, gave "The Distinction between Hog Cholera and Swine Plague," and the post-mortem appearances as usually observed in these diseases. Dr. Moore's paper and remarks were very instructive. Few men are able to distinguish between these two diseases, but we feel that every one who heard Dr. Moore on this subject added to his store of professional knowledge a rich supply of material touching an important question of a disease which is quite obscure, and which is constantly working eastward, and this year to a greater extent than ever. The paper brought forth many questions of inquiry and was discussed all around the room.

A motion prevailed to hold an evening session. Adjourned for dinner to convene again at 7.30 P. M.

Evening Session.—The President appointed as a Committee on Resolutions the following named gentlemen: Drs. Gill (Chairman), Kelly, O'Shea, Pendry and Morris.

Dr. W. L. Baker read a paper on the "Uses of Cold in the Treatment of Laminitis." The merits of such treatment were discussed freely. The meeting adjourned.

September 15th.—Meeting called to order at 11 A. M. Morning session opened by the reading of a paper by Prof. Roscoe R. Bell, of the American Veterinary College, subject, "Infectious Catarrhal Fever of Horses." Dr. Bell's paper covered every phase of this disease. The etiology, pathology and treatment were handled in a clear, concise manner. The paper was very instructive, eliciting much discussion.

"Caudal Surgery," its object and results, were clearly defined from the pen of Dr. W. L. Williams, of the State College. Dr. Williams being unable to attend the meeting, Prof. Law delivered the paper.

Dr. Charles Cowie gave an instructive paper on "Thoroughpin and its Treatment." His method is to draw off the bursal fluid and then fire the lining membrane of the sac, a mode of treatment among some veterinarians in France thirty-five years ago. Dr. Bell, of Watertown, treats thoroughpin by the same method; both he and Dr. Cowie report excellent success from this kind of treatment. The opinion of many in the room was that Dr.

Cowie had unlocked an old treasure box and exhibited something new.

The next paper on the programme, "Veterinarians as Jurors," by Dr. Morris, who called attention to the principle that as citizens and professional members of society, we have no right or excuse to refuse to bear our just proportion of the obligations we owe to the public, which co-exist with the function of citizenship. That shirking jury duty is skulking from a common duty, and gives semblance to the impression that the men of the profession refuse to uphold one of the fundamental laws of the land, and to show his disrespect for a time-honored institution, which has become a bulwark in the fabric of civilized nations.

A motion prevailed to adjourn for lunch.

Afternoon Session.—The meeting convened at 2 P. M. Committee on Resolutions reported that nothing had been presented. Dr. Huff, of Rome, presented a communication relative to sanitary work performed by their local board of health, among the dairies supplying that city with milk; also read newspaper extracts in criticism of that work. A motion prevailed directing the Secretary to communicate with the health authorities of the city of Rome, tendering them an expression of approval for the excellent sanitary work they were carrying out in behalf of the consumers of dairy products and animal flesh.

Nominations and election of officers being next in order, the following named gentlemen were elected for two years: W. L. Baker, of Cortland, President; Roscoe R. Bell, of Brooklyn, Vice-President; and C. D. Morris, of Pawling, Secretary-Treasurer. The Censors elected were Prof. James Law, of the State College, Ithaca; W. H. Kelly, Albany; M. M. Poucher, Oswego; Wilson Huff, Rome; H. D. Gill, New York City.

A motion to consider a place for holding the next annual meeting was carried; and after a brief discussion on the question by balloting New York City was chosen by a majority of one.

A motion to adjourn was carried.

CLAUDE D. MORRIS, *Secretary.*

VETERINARY ASSOCIATION OF THE DISTRICT OF COLUMBIA.

The September meeting of the Veterinary Association of the District of Columbia was held in Elks' Hall, 1006 "E" Street, N. W., Washington, D. C., September 25th, 8 P. M., with the Vice-President, Dr. Buckingham, in the chair. Minutes of previous meeting approved.

A letter was presented from the Commissioners of the District of Columbia, in which they stated that the application of this society relative to the muzzling of dogs running at large during the summer months had been referred to the attorney for the District, who gave his opinion stating that it was illegal to issue such an order. The association directed the Secretary to call the attention of the Commissioners to the police regulation which directly applied to the muzzling of dogs.

The Legislative Committee reported that at the next meeting it would propose a new paragraph for the bill which is to be introduced during the next session of Congress, regulating the practice of veterinary medicine and surgery in the District. This paragraph will be of a reciprocative nature and will provide that such States as will in the future recognize the certificates granted by the Board of Veterinary Examiners, to be created by Congress in said bill, as entitling holders of said certificates to practice in their respective States without undergoing another examination by the State Board of Veterinary Examiners of said State, will be treated in a similar manner by the authorities of the District of Columbia, and veterinarians of such States will be privileged to practice in the District of Columbia provided they have a certificate from a State Board of Veterinary Examiners.

Dr. C. B. Robinson moved that this association extend an invitation to the U. S. V. M. A. to hold its next meeting in this city. Approved unanimously amid cheers.

Letters of regret were received from several members, among which was one from Dr. D. E. Salmon, recently elected a member of this association, but promising to be more punctual in the future.

The regular subject of this meeting, which was the discussion of tuberculosis and its relations to the health and welfare of the District, was brought forward by Dr. C. B. Robinson presenting the following resolutions, which were unanimously adopted after a long discussion, and the Secretary was directed to forward them, along with a letter, to the Commissioners of the District.

WHEREAS, Tuberculosis exists to a large extent among the dairy cows in the District of Columbia, Maryland and Virginia, all of which sections supply milk and meat to the city of Washington, D. C., and

WHEREAS, Good beef, free of disease, is plentiful and comparatively cheap in this country, and

WHEREAS, The slaughter of cows for meat which have been condemned for dairy purposes on account of tuberculosis and other diseases, is constantly occurring in the abattoirs of the District and surrounding country ; be it therefore

Resolved, That it is the sense of this association that such meat is extremely dangerous for human consumption and that no cows which have been used in dairies should be allowed to be slaughtered for food except under the inspection of the veterinary surgeon in the employ of the District of Columbia; and that a copy of these resolutions be forwarded to the Commissioners of the District of Columbia.

J. P. TURNER, *Secretary.*

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The regular monthly meeting of this association was called to order at eight o'clock P. M., at the Academy of Medicine, on Wednesday, Oct. 6th, with the President, Dr. Huidekoper, in the chair.

The following members responded to roll-call: Drs. J. S. Cattanach, Delaney, Dair, Ellis, Farley, Foy, Gill, Huidekoper, Hanson, Machan and MacKeller.

The minutes of the previous meeting were read and approved.

The Board of Censors and Judiciary Committee had no reports to make.

The Committee on Publication reported having considerable of the material of the "Blue Book" now in the hands of the printer, and the rest ready, outside of corrections; also that considerable addition to the original undertaking had been considered advisable, and had been accomplished, taking in every State in the Union and the laws relative to contagious diseases in the United States and Canada.

Under the head of new business, a motion was made by Dr. Gill, and seconded by Dr. Hanson, that the President appoint a committee to draft suitable resolutions upon the death of our late member, Edward Loomes. Carried.

The President thereupon appointed to act on said committee, Drs. Gill, Cattanach and Farley, and directed that a recess be taken for the preparation of the resolutions. On returning, the committee submitted the following:

WHEREAS, It has pleased Almighty God to take from amongst us our respected professional brother, Dr. Edward Loomes, a charter member of this association, and,

WHEREAS, He was a man of great personal attraction, and his ability as a veterinarian commanded a large and remunerative practice, and,

WHEREAS, By his death this association loses a valuable member, and the profession a worthy colleague; therefore, be it

Resolved, That we, the members of the Veterinary Medical Association of New York County, tender to his bereaved widow, in this the hour of her affliction, our heartfelt sympathy; and be it further

Resolved, That a copy of these resolutions be properly engrossed and presented to Mrs. Loomes.

Moved and seconded that the resolutions offered by the committee be adopted. Carried.

Moved and seconded that the meeting adjourn. Carried.

ROBERT W. ELLIS, D. V. S., *Secretary.*

THE MISSOURI VALLEY VETERINARY MEDICAL ASSOCIATION convened in the lecture room of the Kansas City Veterinary College on the evening of October 6, 1897, and was called to order by the President, Dr. S. L. Hunter. The following named members were present: Drs. E. H. Biart, T. A. Bray, S. L. Brooking, Jno. Ernst, R. H. Harrison, W. A. Heck, F. W. Hopkins, S. L. Hunter, G. A. Johnston, B. F. Knapp, R. C. Moore, E. P. Schaffter, R. P. Steddom, S. Stewart, J. B. Wright, and a number of the college students.

The President did not deliver an address, but gave in lieu thereof a financial statement of the affairs of the association for the three years he served as Secretary and Treasurer. The statement showed a small cash balance on hand and a considerable amount of unpaid dues still to be collected.

Dr. Brooking presented a very terse yet interesting paper on the subject of "Extra-Uterine Pregnancy," in which he called attention to the frequency of its occurrence in the sow in contrast to its infrequency in the cow and mare. The doctor had seen two extra-uterine fœtuses removed from the abdomen of one sow. The paper called forth an interesting discussion.

Dr. Knapp presented a short paper on "Texas Fever," in which he called attention to the post-mortem lesions as seen on the slaughter-beds, and noted the absence of many of the typical conditions seen in cases which died from the disease or had been killed shortly before they would have died to study the disease lesions. The discussion of this paper was quite animated and all the members, also some of the visitors, contributed points of interest.

Dr. Heck reported a very interesting and peculiar case in a horse of laceration of a muscular pillar of the diaphragm, with inflammation extending to the adjacent organs, case terminating in death. The doctor noted the peculiar desire of the horse to lie in a wallow of mud, in sterno-ventral position, with fore limbs flexed under the chest like a cow.

The association passed a resolution, instructing the Secretary to urge the U. S. V. M. A. to hold its next annual meeting at Omaha, Neb., and pledging its good offices in helping to make that meeting interesting and profitable.

Dr. S. Stewart kindly favored the association with a talk on the proceedings of the U. S. V. M. A. meeting at Nashville.

The association adjourned to meet Wednesday evening, December 8, 1897, at Kansas City Veterinary College.

E. P. SCHAFFTER, V. S., *Sec'y.*

MASSACHUSETTS VETERINARY ASSOCIATION.

The monthly meeting of the Massachusetts Veterinary Association was held June 16th, at the Quarantine Station, Gallop's Island, which was opened to the association through the courtesy of the Board of Health of the City of Boston.

Members present were Drs. Beckett, Blackwood, Bunker, Burr, Emerson, Frothingham, Hamilton, Howard, Labaw, Lewis, Osgood, Parker, Penniman, Peters, Peterson, Pierce, Rogers, Sheldon, Williams, Winchester, McLaughlin, Stickney. As guests, Dr. Monell, of Lawrence; Dr. A. S. Lamb, of Woburn; Mr. Fred. A. Wiel, of the Lawrence *American*, and Mr. Andrew Ward.

The members left Lincoln Wharf aboard a fine tug, which was placed at our disposal by N. Ward & Co. After an inspection of the different departments, President Winchester called the meeting to order in the laboratory.

Minutes of the previous meeting were read and adopted.

Dr. Bunker moved that this meeting be considered our regular monthly meeting, and that when we adjourn we adjourn until September.

Dr. Frothingham read a paper on the method of procedure in preparing anti-toxin, which was very instructive.

Dr. Burr explained the condition of each horse in the stable that is used for serum, and their condition before and after.

The association then took the tug to Pemberton. There they were taken by the electric railway to Strawberry Hill, where a shore dinner was served at the Wareland House. After a "smoke talk" we were taken on barges through the town of Hull, back to the tug, where a few returned to Boston by the regular boat, and the rest took a moonlight sail out to sea, returning to Boston about 10.30 P. M.

HENRY S. LEWIS, *Secretary*.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The September meeting of this association was called to order by President James B. Rayner, Tuesday evening, 13th, at 8:30 P. M., in room No. 1, corner Broad and Filbert streets, Philadelphia, with the following members of the profession present: W. H. Hoskins, Chas. Lintz, Jas. T. McAnulty, Jas. B. Rayner, W. L. Rhoads, Thos. B. Rayner, Wm. Ridge, and C. J. Marshall; also students from the Veterinary Department of University of Pennsylvania.

Upon the recommendation of the Board of Trustees, Dr.

Ridge was unanimously elected to active membership, or, more properly speaking, reinstated, he having resigned April 4, 1890.

Dr. James T. McAnulty now gave a very comprehensive talk upon what the various schools of farriery intend doing throughout he coming winter session, outlining first the course of instruction to be given, then the form of examination, and a number of questions as an example of what would be asked ; the code of ethics which each must sign upon their graduation, and then he portrayed the undoubted advantage that must necessarily accrue to the workers of the craft. He asked for the assistance and coöperation of the veterinary profession in the good work of the Master Horse-shoers Protective Association. The Keystone extended to the Master Horse-shoers Association, through Dr. McAnulty, its fraternal sympathies and support.

We now heard from those who had the good fortune to be at the National meeting at Nashville. They all expressed themselves as having a good time and more than repaid for any sacrifices they may have made. The honor of being elected to the Eastern Vice-Presidency having fallen upon our Dr. Thos. B. Rayner, he was called on for a speech. He graciously responded and acquitted himself with honor.

Dr. Ridge now reported several cases of pyæmia in a herd of cattle caused by briar scratches and then tramping through stagnant water.

President Jas. B. Rayner now admonished the members to be more prompt in attendance and time of arrival, that the meetings might always be called to order at 8 P. M. sharp, thus giving time to carry out our programme before any had to leave for home.

On motion, the meeting adjourned till Oct. 12.

DR. W. L. RHOADS, *Secretary.*

TENNESSEE VETERINARY MEDICAL ASSOCIATION.

The second annual meeting of this association was held at the Tulane Hotel, Nashville, Tenn., on Monday, Sept. 6th. In the absence of the President, the First Vice-President, Dr. Jos. M. Good, called the meeting to order.

The minutes of the last meeting were read and approved.

The Committee on Permanent Organization reported that they had drawn up a Constitution and By-Laws for the approval of the association. The Secretary was then instructed to read the proposed Constitution and By-Laws, which was done, and, after some modifications and alterations, they were adopted.

The regular order of business was then taken up. On roll-call the following members answered to their names: Dr. Good, Chattanooga; Dr. White, Chapel Hill; Dr. Rauch, Memphis; and Drs. Hagyard, Rayen, Scott and Plaskett, of Nashville. Dr. Blackman, of Rome, Ga., but formerly of Tennessee, was also present. It was moved and carried that Dr. Blackman be elected an active member of the association.

The next business being the election of officers, the Secretary read a letter of resignation from Dr. Scheibler, President of the association, which, after some discussion, was accepted.

Dr. Good was nominated for President and unanimously elected. This leaving the First Vice-Presidency vacant, Dr. White was elected to that office. These gentlemen in neat speeches thanked the members for the honor they had conferred on them, and promised to use their best endeavors to advance the interests of the association.

It was moved and carried that 300 copies of the Constitution and By-Laws be printed, and that a number of copies be sent to each member throughout the State.

Dr. Rayen, Chairman of the Local Committee, moved that every member of the State Association should assist the Local Committee in the entertainment of the U. S. V. M. A., which was to convene in Nashville the next day. This was seconded and carried.

The time and place of the next meeting were left to the Executive Committee, and, there being no other business, the meeting adjourned.

JOS. PLASKETT, D. V. S., *Secretary.*

ONTARIO VETERINARY ALUMNI OF MASSACHUSETTS.

On October 7th a society of veterinarians was formed at the United States Hotel in Boston, to be known as the "Ontario Veterinary Alumni of Massachusetts." Dr. C. H. Pierce, of Boston, President; Dr. Abele, of Quincy, Secretary, and Dr. Keene, of Fitchburg, Treasurer. Papers were read and discussed by Drs. Pierce and Abele.

The next meeting will be held at the same hotel, the first Wednesday in December. All Ontario graduates from Massachusetts are invited to join. Papers will be read by Drs. Keene and Stearns. The society would be glad to learn of eligibles who have not been corresponded with. Will any such reading this magazine kindly correspond with

DR. ABELE, *Secretary*, *Quincy*, *Mass.*

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

President Salmon announces the appointment of the following committees:

Executive—T. S. Butler (Chairman), F. H. Osgood, W. Horace Hoskins, W. L. Williams, T. J. Turner, M. Stalker, M. H. Reynolds.

Publication—W. L. Williams (Chairman), N. P. Hinkley, R. R. Bell, W. B. Niles, S. Stewart.

Finance—M. Stalker (Chairman), M. H. McKillip, S. Stewart.

Intelligence and Education—Leonard Pearson (Chairman), W. B. Niles, John M. Parker, Olof Schwarzkopf, R. R. Dinwiddie.

Diseases—A. T. Peters (Chairman), E. P. Niles, W. H. Dalrymple, Joseph Hughes, J. F. Winchester.

Resolutions—A. W. Clement (Chairman), Leonard Pearson, C. A. Cary, A. T. Peters, S. Stewart.

THE MONTREAL VETERINARY MEDICAL ASSOCIATION.

The regular meeting of this association was held October 14th in the library, the retiring President, Prof. Baker, occupying the chair. After roll-call and the reading of minutes of the previous meeting, which were accepted, the election of officers for the ensuing year, which had been postponed, took place, with the following results: President, Prof. Charles McEachran; First Vice-President, Prof. M. C. Baker; Second Vice-President, Dr. Martin; Secretary-Treasurer, W. B. Wallis; Librarian, J. P. Spanton.

The retiring President then made a few farewell remarks, pointing out the advantages of such societies, especially to students, in educating them how to properly express themselves in public, and also that the reading of essays necessitated a man getting up his subject exceptionally well, in order to properly defend his paper.

The newly-elected President then took the chair, and, after expressing his appreciation of the honor done him, urged upon the members the value of practical work, and of the experimental committee in making careful reports of the action of drugs.

Mr. Lambert being called upon by the President, read a practical though somewhat brief essay on the nature and treatment of inflammation. Treating his subject from a clinical rather than a theoretical point of view, he explained the reactive phenomena occurring in nature during the process, by some original illustrations. In the argument which then followed, it was suggested that the benefit derived from applying counter-irritation to a diseased articulation, might in part be due to the prolonged rest and degree of inability such an agent enforced on the part.

Mr. Wallis then reported a severe case of pneumonia in a race horse, his object being to advocate the use of some preventive treatment during convalescence against the disastrous whistling and roaring that were so frequently commemorative of diseases of the respiratory organs situated in the thoracic cavity. For this purpose he suggested a course of potassium iodide and nux vomica, the former to hasten the absorption of inflammatory products, whilst the latter might correct any defective nervous power.

The President then appointed Messrs. Paquin and Spanton as essayists for the following meeting, and Mr. Lambert to report a case.

Messrs. Bell and Spanton were appointed as acting members on the experimental committee.

There being no further business, the meeting then adjourned.

W. B. WALLIS, *Secretary-Treasurer.*

NEWS AND ITEMS.

DR. F. P. WILLIAMSON, formerly of Raleigh, N. C., has located at Velasco, Texas.

M. R. TRUMBOWER, D. V. S., late State Veterinarian of Illinois, has removed to St. Louis, Mo., his address being 508 Holland Building.

HOG CHOLERA IN DELAWARE.—Hog cholera is epidemic in the northern part of Kent County, Delaware, scarcely a single animal escaping infection.

DR. N. S. MAYO, formerly Professor of Veterinary Science at the Kansas Agricultural College, has accepted a chair in the Connecticut Agricultural College, Storrs, Conn.

DR. S. GLASSON, JR., D. V. S., of Middletown, N. Y., has removed to Newburgh, where he has succeeded his brother-in-law, the late Dr. James Johnstone, whose death is announced elsewhere in this issue.

DR. JOHN R. MOHLER, inspector in the Bureau of Animal Industry, recently transferred from Southern California to Kansas City, has been placed in charge of the government microscopic inspection of pork at Milwaukee.

AN ANTISEPTIC POWDER FOR SUPPURATING WOUNDS.—The Quebec *Revue Médicale* for September 8th gives this formula as Schwartz's: ℞ Iodoform, salol, bismuth subnitrate, charcoal, cinchona, benzoin, equal parts. Mix.

AT the October meeting of the Veterinary Medical Association of New York County there were present as visitors Prof. Olof Schwarzkopf, formerly of Chicago, but now engaged in practice in Flushing, L. I., and Dr. Nicolas, of Mount Vernon, N. Y.

THE ANTIVIVISECTION PLEDGE.—"I pledge to never knowingly employ a physician practising or upholding vivisection unless in case of immediate danger or death." The antivivisectionist is evidently as great a foe to grammar as she is to any other science.

HYDROPHOBIA IN PRUSSIA.—According to official statistics, 107 persons died of hydrophobia in Prussia in the years from 1877 to 1894, but there was not a single death from that cause in 1895, although 368 cases of mad dogs were reported and 906 suspected animals, in addition, were killed by the police.

DR. C. J. SIHLER, for several years inspector in charge of government inspection at the Kansas City stock yards and several large slaughter houses in that city, and more recently doing special work for the B. A. I., in California, has resigned, and will enter on the practice of his profession in Kansas City.

AN EXPECTORANT MIXTURE.—Espagne (*Semaine médicale; Progrès médicale*, September 4, 1897) is credited with the following formula: ℞ syrup of ipecac, 8 to 10 parts; syrup of tolu, brandy or rum, each 20 parts. Potassium bromide, 1 part. Linden water 75 parts. Mix. Sig.: A tablespoonful every two hours.

PRESIDENT TRUMBOWER, of the Illinois State Veterinary Medical Association, writes the REVIEW that he has called a meeting of that association to take place at the Sherman House, Chicago, on November 3d and 4th, in conjunction with the Chicago Veterinary Society, and that he has assurances of an interesting programme.

ADULTERATION OF FOODS AND DRUGS.—The Department of Agriculture is, under authority of Congress, investigating this subject, with the idea of securing a national law for its prevention. Special Agent Wedderburn has sent out a circular letter to obtain facts and suggestions from various reliable sources to formulate a report to Congress.

PROF. JAMES LAW, of Cornell University, and Dr. T. A. Geddes, of the Bureau of Animal Industry, were recently secured by the governing authorities of the Kansas Agricultural College to aid in determining the character and extent of disease in the college herd of pure-bred cattle. It is reported that a large per cent. of the herd was found to be affected with tuberculosis.

THE ANNUAL ANNOUNCEMENT of the Ontario Veterinary College for session 1897–98 has just been issued, and announces that it has recently been affiliated with the University of Toronto, and that its prospects for a good attendance of students at the approaching session are favorable. The session commenced on Wednesday, October 13th, with about one hundred students.

A RISE IN THE PRICE OF BEEF is reported from the Pacific Coast, and in some parts of Texas butchers are with difficulty obtaining supplies for their trade at a half-dollar advance, as all sorts of cattle are being held in expectation of a further rise in prices. The tendency is decidedly upward as no doubt exists, as to the shortage in supplies.—(*Breeder's Gazette, Oct. 6.*)

PROF. H. D. HANSON, of New York City, who has been suffering from a nervous trouble for the past six months, having been ordered to cease all work by his physician, has returned to his duties after an absence of several months in the mountains. We are very glad to announce, on the authority of the patient, that although not entirely well, he is so much improved that his ultimate return to perfect health is but a question of time.

PROGRESS OF THE BICYCLE.—Cycle racing is degenerating. Many may choose to dispute that point, but the game is getting less and less interesting and has far more of a hippodrome air about the events. This is caused, most likely, by the influence of money-getting that pervades every foot of the track around which the riders scurry, not for sport, not for the good of athletics, but for the purse of gold or greenbacks that always is in front of them and not always figuratively either. The absence of the club enthusiasm is noticeable at recent tournaments. Such a condition betokens a rapid finish to the racing game of cycling.—(*Spirit of the Times.*)

VETERINARIANS IN THE LUETGERT CASE.—In the famous Luetgert trial in Chicago the defense endeavored to show that certain bones found in the vat in Luetgert's factory and which the prosecution charged were those of his wife, whom he had murdered, Veterinarians L. A. Merillat and Joseph Hughes were called to testify as experts, and they both agreed that the bone the M. D.'s had pronounced a human femur belonged to a young hog; that the alleged section of a human rib was the navicular bone from a ruminating animal, and that the temporal bone exhibited was not so in fact, but was a number of conglomerate bones stuck together by artificial means.

INCREASING FACILITIES OF THE BUREAU OF ANIMAL INDUSTRY.—A request for a substantial increase in appropriations will be asked by Secretary Wilson in his annual report to Congress. If the request is granted the additional funds will be applied to increasing the force of the Bureau of Animal Industry and to the farmers' bulletins and the Weather Bureau. Secretary Wilson says that the facilities of the Bureau of Animal Industry for the inspection of meat intended for foreign shipment are overtaxed, and that the experiment already made by the bureau in the shipment of butter to England should be followed up by more work in that line. The increasing demand for farmers' bulletins makes an additional appropriation necessary, not only to increase the circulation of the bulletins but to enlarge upon the range of subjects treated. He also desires to establish several new weather stations.—(*Breeder's Gazette.*)

NOTES FROM "F. X. T."—New York County: Send the names and addresses of all illegal practitioners to the Judiciary Committee of the Veterinary Medical Association of New York County, together with as much evidence as possible. . . . Veterinarians of New York and adjacent counties ought to become members of the Veterinary Medical Association of New York County, and make it the best veterinary society in the United States. . . . The Veterinary Medical Association of New York County will hold its annual election of officers on Wednesday, Dec. 1st, at the Academy of Medicine, Forty-third Street, near Fifth Avenue. All members should consider it their duty to be present to vote. . . . The "Blue Book" is in the printers' hands, and is expected to be before the public shortly. . . . Prof. Liautard has returned from Paris, anp can be found at his desk in the American Veterinary College working the same as he has done for years.

VETERINARY PROTECTIVE LAWS FOR HAWAII.—The REVIEW has received the following letter from Dr. W. T. Monsarrat, dated Honolulu, H. I., Oct. 7th, 1897: "If it is convenient to you I would like to procure the law regulating the practice of veterinary surgery and medicine in your State. The veterinarians residing here intend to have a bill to that effect presented at the next session of the Legislature. I am a subscriber to the REVIEW through one of our local news companies, a graduate of the Ontario, class of '89, and employed by our Board of Health as Inspector of Meats and Dairy Cattle; was at one time Government Inspector of Animals, holding the position for four years. The position is now held by J. R. Shaw, D.V.S., of McGill, who is also an Inspector of Dairy Cattle. We are now making a crusade of the dairies with the use of tuberculin; have condemned and killed so far one hundred and twenty-six out of about three hundred and twenty-five injected with tuberculin, taking seventy-three out of one dairy of one hundred and thirteen—a very large percentage I would say in such an out-of-the-way place as this. I could safely say that fifty per cent. of our cows on this island (Oahu) have tuberculosis. Wishing success to the REVIEW and that your good work may be continued, I am, respectfully yours."

FRIENDSHIP FOR BRUTES.—When a big gray horse drawing the tender of one of our fire engines fell against a lamp post—one of the disused and rusty things that ornament our thoroughfares—he broke his back. Instead of shooting the poor creature at once, a fireman relieved him of his harness and sat on the pavement for an hour and a half holding his head on his knees and stroking and talking to him. It was an exhibition of affection and sentiment that is not often seen in a city, where horses are treated like the beasts of burden that they commonly are—beings who can do so much work and are forced to do it. It was an exhibition that honored the fireman and all who showed their sympathy with his grief for the coming loss of his friend. If such a bond of good feeling existed between our own and the supposedly inferior races we should live in a safer and better regulated world. Many of the brutes are at least as worthy of our affection as certain of our kind. They do not make themselves vexatious to the community by drunkenness, savagery, hoodlumism, theft or murder, and we cannot truthfully say the same of all men. In many ways men do not live up to the moral possibilities of the dog—that is, some men. The recognition of worth in our dumb friends is late, but desirable.—(*Brooklyn* (*N. Y.*) *Eagle*, *Oct. 12.*)

He Turned Up, But Attired in Military Garb.—We have the following interesting bit of news from a Southern correspondent: "There are some individuals whose presence or absence, at any representative gathering of the profession or business to which they belong, gives occasion for remark. Such was the case with one of our prominent Eastern members whose conspicuous figure was so much missed from the thirty-fourth annual convention of the U. S. V. M. A., held in Nashville, Tenn., the correct date of which he was, we have no doubt, officially notified, but on account of some valid reason best known to himself, did not put in an appearance "on time." Although some thirty or forty days late, however, he did turn up in the Centennial City, but attired in the chevrons of a sergeant-major of Troop C, N. G., N. Y. Just how long our gallant military *confrère* had frequented the beautiful and picturesque grounds of our Southern White City, we are not prepared to say, but he was found on the Streets of Cairo, where he had, no doubt, been testing his equestrian powers on some of the "ships of the Eastern desert," and otherwise enjoying the sights and frivolities to be seen on "Vanity Fair." Compassion for our friend touched a respondent chord in our hearts, and we saw him safely off from the union depot, with the train headed East. In this act of fraternal consideration, the profession are under a debt of gratitude to the veterinarians of Nashville. So left us, Dr. W. H. Pendry, of Brooklyn, N. Y., with the parting ejaculation, 'Just tell them that you saw me.'"

POSITION WANTED.

An M. R. C. V. S. (Lond.), 10 years in practice, part of time lecturing, would join V. S. in large city practice with view to succession or would act as locum tenens during absence of V. S. Address Arthur Blake, Nailsworth, Gloucestershire, England.

BACK NUMBERS REVIEW WANTED.

The Iowa State Board of Health will pay 50 cents for No. 6, of Vol. XIX and $4.00 each for volumes IX and X complete. Address Dr. J. F. Kennedy, Iowa State Board of Health, Des Moines, Iowa.

FOR SALE. BACK NUMBERS OF THE REVIEW.

American Veterinary Reviews, at 25c. each – No. 4, 9, 10, 11, Vol. XVI. No. 1., Vol. XVII. Geo. A. Waterman, V. S., Michigan Agricultural College, Michigan.

A subscription to the Review is worth two or three text-books.

AMERICAN VETERINARY REVIEW.

DECEMBER, 1897.

All communications for publication or in reference thereto should be addressed to Prof. Roscoe R. Bell, Seventh Ave. & Union St., Borough of Brooklyn, New York City.

EDITORIAL.

FEMALE VETERINARIANS.

In our era of progress it is not surprising to see women entering liberal professions. We have women doctors of law, perhaps doctors of divinity. We may by and by have them doctors in dentistry. Why should they not be also doctors of veterinary medicine? To reach this, a few, very few, have already entered the schools of the continent and even lately England has granted her degree to a fair candidate, and, of course, America is following the example, one lady having already entered one of the New York schools, and we are informed several have made inquiries as to admittance in another, though they were deterred from giving execution to their intentions by the severity of the requirements, length of studies, etc. With our ordinary tendency of overdoing things in America, it is fair to suppose that before long every school in the country will have a mixed class of male and female students.

It is not our intention to make any remarks as to the propriety or impropriety of ladies entering the veterinary profession, nor to discuss the *pro* and *con* to justify their desire to become veterinarians, as we sincerely believe that they ought to be left to make their own selection; but the following extract from a letter published in an English exchange, seems to us very appropriate, and we think deserves proper notice as a means to present to ladies ambitious of the title of D. V. S., or any like title, the true and correct aspect of the case, which may arrest them from entering a profession which, with all its attraction, its extensive field for study and great interest, may on so many occasions by its calling oblige her to abandon or lay aside all the grand feelings which are characteristic of her sex. The extract of "Fosco's" letter taken from the *Veterinary Record* reads as follows:

"Viewing the subject entirely dispassionately it appears to me that veterinary surgery is of all the learned professions the one least adapted for women. If the practice of veterinary surgery consisted in making a round of visits among lap-dogs, or drawing-room pets of that description, and simply diagnosing their diseases and giving advice as to dieting and general hygienic conditions, and writing a prescription or even dispensing the necessary medicines, then, and only then, the profession *might* be a suitable one for women possessed of any delicacy of feeling. But as we all know there is no such practice as the above to be found in the United Kingdom; and even if the female practitioner were to confine herself entirely to canine and feline practice, yet she is bound to meet with certain operations in the pursuit of her calling which must (or perhaps in view of the new woman I had better say should) be utterly repugnant to any one possessing what is the greatest charm of any true woman, namely, modesty. No lady—using the word in its true sense—would like to perform those operations which are the almost daily work of the veterinary practitioner, especially when we take into consideration the fact that male assistance in securing the patient is practically indispensable. Of course if a women is prepared to unsex herself completely and to throw to the four winds all feelings of modesty and delicacy there is no reason why she should not become a successful practitioner of veterinary surgery even among the larger animals; but all who know what the nature of veterinary practice is will, I am sure, agree that unless prepared to do this no woman can hope to practice with any degree of pleasure, to say nothing of success. . . . . . If women, instead of seeking notoriety by any means in their power would be content to fulfil those duties for which they are fitted by nature they would not only secure a greater measure of true happiness to themselves, but would also be of incalculable service to their fellow creatures and their native land."

ASININITY OF THE M. D. ON VETERINARY TOPICS.

In the face of all the observations and experiments of the qualified agents of the governments of almost every civilized nation of the earth, of the life studies of the veterinary savants of Europe and America, and their recorded conclusions in reference to the etiology of bovine tuberculosis, a medical practitioner in Brooklyn has solved the gigantic problem of its prophylaxy in the simplest and most inexpensive manner possible, based upon his vast experience gained during "his summer vacations in all parts of the country." Not only this, but he has discovered that bulls, steers, and unimpregnated heifers never contract the disease. That such an authoritative journal as the *Medical Record* should give space to such arrant twaddle is incomprehensible. It is not an isolated case of medical ignorance upon veterinary subjects, but is a sample of many of its kind, and is a serious argument against placing animal diseases under the charge of State Boards of Health, made up almost exclusively of medical practitioners. We reproduce the document in full:

> "*To the Editor of the Medical Record*:—SIR: A few years ago we were surprised and alarmed by the discovery that a large number of the dairy cows of this country and Europe were affected with bovine tuberculosis. The public was much excited, and I believe that most of the diseased cows were destroyed and the expenses added to our already overburdened tax-list. And there the matter seemed to have ended, so far as the institution of any preventive measures was concerned.
>
> "Since that time during my summer vacations in all parts of the United States I have endeavored to find out the *cause* of bovine tuberculosis, and the answer has invariably been *over-milking*, viz., not allowing the cows any rest during pregnancy, but milking them from *one year to the other until they die.* In many instances I know this to be true, as the farmers have assured me that their cows *never* 'went dry'; but these same farmers would never allow their own children to be nursed during their mother's pregnancy.
>
> "I am assured that *bulls, steers, and unimpregnated heifers* never contract tuberculosis.
>
> "That there are other secondary causes, such as too close confinement in warm houses or stables, I have no doubt; but the *primary and principal cause* is as I have stated above, and it must and will be remedied; not by forever killing the cows as they develop the disease, but by removing the cause.
>
> "The law should compel every farmer or dairyman to allow his cows to go dry for the last three months of gestation.

"This is a very important matter, and I hope that other physicians will investigate for themselves. JOHN H. TRENT, M.D.

196 Seventeenth Street, Brooklyn.

TAUTOLOGICAL EXTRAVAGANCE.—When one bears in mind how frequently the *Journal of Comparative Medicine, etc.*, indulges in apologies to its readers for the omission of important articles on account of pressure upon its plethoric pages, it is difficult to understand how so much valuable space could be spared in the editorial department of its November issue to print the same item three times, with the only object of showing that a paragraph which we had found in a prominent position in the *New York Spirit of the Times*, had originally emanated from the editorial mind of the *Journal*, without stopping to appreciate the fact that the only idea which the REVIEW had in reprinting and crediting it to the New York sporting paper was to show veterinarians that the Anti-vivisection Bill was of such vital import as to call forth editorial comment from a powerful representative of the secular press. The junior editor of the REVIEW is a close reader of the *Journal*, and always finds something to interest, often to instruct, and sometimes to amuse.

HIGHER EDUCATION is a slogan that every honorable man has delighted to reëcho. But New York raised it so high at one bound as to lift the responsibility of education in the medical sciences clear of its borders. With 48 counts for an entrance examination (which includes subjects as foreign to medical education as the Klondyke is from Patagonia) the State has driven thousands of students from the veterinary, dental, and medical schools into other States, whose laws are progressive but not prohibitive. Unless the law is modified, there will not be a corporal's guard of students in the Empire State, which was once the centre of medical education.

A PROPHETIC VISION INDEED.—The *Veterinary Journal* (London) for November gives up its entire editorial department to a five-page idiotic and clumsily-constructed lot of nonsense entitled "A Prophetic Vision; being a Lecture to be Delivered by the President of the Royal Zoological Society at the Opening of the Session, November, 2097." It purports to be an historical sketch of an extinct animal known as *equus caballus*, or the horse, and describes the motive power for carriages and other vehicles of that date as electric cables. Such twaddle may be appropriate reading matter for English comic papers, but for a professional journal it is stupid and out of place.

THE TUBERCULOSIS CRUSADE IN HONOLULU.—A check is sought to be placed upon the testing of cattle with tuberculin in Honolulu by a charge that the epidemic of dysentery now affecting the people of that city is due to the tuberculin injected into the milk cows by the local inspectors, and the author of the charges makes the assertion that its use has been abandoned in Germany for the reason that it poisons the system and renders the milk unfit for consumption. Surely the veterinarians of that country have had sufficient evidence of the falsity of such assertions through the pages of the REVIEW and other sonrces to effectually deny and prove that the milk from tested cows suffers no deterioration in its purity from such a source.

THE ENGLISH LADY VETERINARIAN.—Principal Williams and his son, Owen W. Williams, of the New Veterinary College, Edinburgh, Scotland, have begun suit against the Royal College of Veterinary Surgeons to compel them to admit for examination for license a lady whom they qualified and who was refused by the examiners on account of her sex.

EDITORIAL MODESTY has naturally restrained us from assuming that the veterinary periodical is the greatest factor in professional development; but there can be no egotism in sincerely seconding the remarks of Dr. Dalrymple in his report to the United States Veterinary Medical Association, which we print elsewhere, and to which we direct careful attention.

ORIGINAL ARTICLES.

THE VETERINARIAN AND THE HUMANITARIAN.

THE CLOSE RELATIONSHIP EXISTING BETWEEN THE VETERINARY PROFESSION OF TO-DAY AND ORGANIZED SOCIETIES FOR THE PREVENTION OF CRUELTY TO ANIMALS.

By W. H. Dalrymple, M. R. C. V. S., Baton Rouge, La.

A Paper read before the American Humane Association, at their Twenty-first Annual Convention, held in Nashville, Tenn., Oct. 15, 1897.

Mr. President, Ladies and Gentlemen of The American Humane Association:

I can assure you I feel highly honored by the invitation extended to me, through your local committee, to address this convention of workers in such a noble cause as that of endeavoring to prevent and alleviate the sufferings of "Nature's Dumb Nobility." Statistics, with regard to the beneficent results, the world over, of the great and good work of this and kindred associations, must be familiar to the majority of you, consequently this impressive side of the work I do not purpose touching upon, but will confine my remarks chiefly to that important branch of the subject suggested by the caption of my paper.

On account of my devotion to that noble branch of medical science of which I have the honor of being a humble representative, I trust I may be pardoned should my effort, on this occasion, appear to savor somewhat strongly of veterinary professionalism. It is a fact, however, that the modern veterinary profession is as yet but slightly known in many parts of this country, and is in consequence, indifferently appreciated. We are constrained to the belief, however, that when the hand of Time has fallen upon its endeavors to right the wrongs of past ages, the dark doings of empiricism, superstition and cruelty will yield to the photophobic influence of the light of education, reason and intelligence.

I have been impressed with the idea that the beautiful lines of the poet Burns, parodied to read: "Man's inhumanity to his dumb servitors makes countless thousands mourn," would make a fitting motto for a humane society, and one which should be firmly impressed upon the mind of everyone, but more especially the young and rising generation, because the earlier the impressions are made, the more lasting are they, not perhaps as the outcome of reasoning, but as the result of implicit belief and faith in the maxims taught in early youth.

There can be no doubt that one of, if not the greatest clog to the wheels of the progress of the work of our humane societies is ignorance on the part of our people, and indifference, which is born of the former; and in order that the acme of our desires may be reached, in seeing the day when the physical infirmities of those dumb but noble creatures which God has given us to lighten our daily routine of work, or contribute to our pleasures, have been respected and considered, we must look to education for the accomplishment of this great end.

Where, it might be asked, should this education commence? It is my conscientious conviction that the nursery is the first school in which the seed should be sown; and that the cultivation and fertilization of that seed should be undertaken by every school, whether public or private, in the land. There should be a grounding in physiology for the purpose of impressing upon the student the normal functions of the various important organs of the animal economy. Attention should also be given to pathology, elementary if you will, to illustrate the results produced by a deviation from the normal standard of health, and the simpler causes by which these conditions are brought about. A somewhat simple but impressive course of instruction on the physiology and pathology of that system of nerves known as the cerebro-spinal, for the purpose of illustrating the effect of nervous irritability, both direct and reflex. In other words, elucidating the phenomenon of pain, its production, etc.

The education of the youth along these lines, would, it seems to me, tend to aid, very materially, the noble work for which our humane societies were organized, and ultimately to decrease the necessity for their existence. There is another school, in which a more intimate knowledge of comparative anatomy, physiology and pathology, might help along, very considerably, the humanitarian work. I refer to our medical colleges. It is unfortunate,—and I speak it with all due respect—that no little ignorance prevails, at the present day, among members of the medical profession regarding the closeness of the analogy there exists between the two branches of medical science. The result is, that but limited assistance to the cause can be expected from that source ; not of course from lack of desire, but from want of confidence, due to insufficient knowledge of such analogy. If our medical institutions would enlarge their field of teaching in the broad subject of medicine so as to include comparative studies, of even an elementary character, our practising physicians, armed with a more or less intimate acquaintance with the subject, would then be able to exert a wholesome influence on the public in this regard, and give more emphasis and weight to the value of the humanitarian work of our associations.

With regard to the influence the veterinary profession has or ought to have, in this direction, it might be stated that all graduates of the modern schools are, in virtue of the profession they represent, honorary members of humane societies ; if not actually enrolled as such, are tacitly understood to exert their influence in the cause of humanity in its application to the lower animals. I claim, then, that the profession of modern veterinary medicine and surgery has the power to be, and in fact is, one of the most potent factors in the education of the people along the lines we have just been considering ; and it may be of interest for us to consider for a few moments the ground upon which such a claim is based. Before proceeding with this part of my subject, however, I would like to emphasize the fact that there are many forms of cruelty perpetrated on the lower animals, inadvertently it may be, and without any cruel intent, but, through gross ignorance of the conditions involved. As an illustration of this, I might quote the saying, "Killed through kindness," and it is true that animals are often subjected to excruciating pain from what might be called "mistaken kindness." For instance, it is a common experience for the veterinarian to be called to relieve the sufferings of some poor animal, the victim of over-feeding and its sequelæ—indigestion, irritation, and inflammation of a portion of the alimentary canal. These pain-producing conditions are frequently brought about through mistaken kindness, the result of a want of knowledge regarding the laws of nutrition. It must be borne in mind that there is a limit to the digestive and assimilative powers; and if we, through ignorance or indifference, indulge in excess with food, animals, which have not the intelligence nor the power to say, "hold, enough," to the point of overtaxing the organs of digestion and producing the agonizing paroxysms we are often compelled to witness, we are, I think, to some extent at least, guilty of cruelty, because such a condition of affairs could be prevented.

Another form of cruelty seen daily on our city streets and thoroughfares, and which we cannot but believe is largely the result of ignorance, is the using of lame horses. Lameness may be defined to be the expression of pain in the act of progression; and as we cannot possibly impeach that noble animal with being guilty of deception, especially to the point of exhibiting signs of pain when not actually in existence, whenever any irregularity of gait is shown, it indicates suffering—of course I allude here to animals that are free from structural deformities—yet we find many people in the enjoyment, seemingly, of unbounded happiness, pleasure-riding behind a poor animal suffering, it may be, very acutely.

Cruelty in another form may be witnessed in many rural sections of the country during the winter season of the year, but which, I opine, escapes the observation, in some measure at least, of the ordinary lay individual. I refer to cruelty from neglect. I have been in the position to see and read reports from correspondents of state departments of agriculture as to the health and condition of live stock, and have been overawed at the enormous mortality resulting from actual starvation during the months of wintry severity. On almost every report the inscription could be seen: "Stock dying from starvation."

Now, I do not presume to say that this baneful state of affairs is occasioned by any positive intention of cruelty, but I can find no other fitting appellation for it. I claim that anyone possessing an animal, or a number of animals, who does not provide the necessary comfort, in the form of food and shelter, during the extreme seasons of the year, is guilty of an overt act of cruelty; and this also applies where a greater number of animals are kept than can be properly provided with the common comforts of animal life.

There are many other species of cruelty perpetrated on the lower animals, through a lack of education and knowledge, that might be alluded to, but as time will not permit of an exhaustive paper on such an inexhaustible topic, I will be compelled to forego discussion of them on this occasion. The references made, however, may, I trust, be the means of awakening special interest among owners themselves, with regard to those conditions which inflict forms of cruelty, through neglect and indifference, but which may as yet be without the pale of the influence of our humane societies.

There is another thought along this line which, if I passed over without allusion, I would feel recreant to duty. I refer to the pain that is often inflicted upon the noblest of our dumb friends as the result of the dictates of *fashion*. There are many people who will thoughtlessly, and I trust I am correct in saying unknowingly, that is, of the consequent suffering of the animal, require of the veterinarian the performance of some operation, simply because fashion seems to demand it. Relative to this topic, permit me to quote to you the remarks of the eminent British veterinary authority, Dr. George Fleming, in his work on surgery. He says: "Humanity is largely concerned in the humane treatment of animals, and in relieving them from pain or distress. All *unnecessary* painful operations are acts of cruelty, and should be discountenanced by the veterinary surgeon. Those operations which, after all, are only fashionable mutilations of perfect animals, devised by a morbidly artificial and corrupt taste, should be suppressed, if not by law, at least by the influence of the surgeon." From the quotation just made it may be inferred that this is the opinion and sentiment of many of the most eminent members of the profession to-day, but, so long as owners remain the slaves of fads and fashions, and ignorant of the pain these "fashionable mutilations" and other modes of torture, from whatever cause, inflict upon their animals, so long will these unnecessary and painful operations and methods be practised. In other words, the demand for such must be decreased, through the better education and enlightenment of the people in those matters, a knowledge of which would greatly preclude he possibility of such requests being made by those of intelligence.

I have, in the foregoing, omitted reference to open and wanton acts of cruelty which could not possibly escape the bservation of even the uninitiated; and have deemed it more nstructive to allude to some of the agencies which lead to painul results, but which are liable to escape the notice of those esponsible for their production, with, however, no cruel intent.

Before leaving this part of my paper, I would like to add a word or two with reference to lameness. It is my opinion, that ome of the officers or inspectors of our humane societies are not ufficiently familiar with the pathology of this condition, and eem to attach less importance, relatively, to it, and more to ther conditions, which, to the casual observer might appear xtremely severe, yet do not, in reality, produce nearly so much ain as that causing an animal to go lame. To illustrate: The driver or owner of an animal may be arrested and fined because f his animal having an abrasion of the skin, or "gall," as it is ometimes termed, below its collar, no larger perhaps than a 25 ent piece; yet on the other hand, 50 or 100 lame animals may e allowed to pass unheeded, unless in the case of those that are bsolutely prostrated and unable to proceed. Now in the case of the abraded shoulder, there may be extremely slight, if any pain at all; while in the latter, lameness is never exhibited without pain, unless in the case of deformity resulting probably from some previous injury, or pathological condition. It must not be understood that I am, in any way, trying to exonerate the owner of the animal with the sore shoulder, and attach blame to the officer for his vigilance. This is not my object. All indications of cruelty, whether exposed to view or occult, should be dealt with, but I am of the opinion, and that from experience, that lameness in our city, and other horses, does not receive the attention it merits at the hands of our humane societies, for the alleviation of a great deal of the suffering of these animals.

In continuing the consideration of the grounds upon which I claim that the profession is a most potent factor in the education of the people in the interests of humanity, I have, in the first place, to notice the fitness of the veterinarian, on account of his special course of instruction and training, which familiarizes him with the lower animals in health and in disease. He has made a study of the anatomy, both microscopical and histological, of the various systems of the equine species, and the differential characteristics exhibited by the other domesticated animals; the physiology, or functions, of the numerous organs and tissues of the body, including that of movement, nutrition, etc.; dietetics, also, including the chemical analysis of the various alimentary matters, their food value, and their nutritive relations, as well as the quality and quantity required for maintenance, repair, for growth or for work. He has studied, also, the various medicinal agents, both mineral and vegetable, and their actions: physiologic, therapeutic, and toxic. Pathology as well, or the study of disease to which the various systems of the animal economy are susceptible; and the most modern prophylactic and therapeutic measures to be adopted for its prevention, control, eradication, or cure. The subject of bacteriology, with its myriad forms of organismal life, their life histories, the poisonous ptomaines they elaborate, and the antitoxins to antagonize their destructive and deadly effects. Suffice it to say, that there is no branch of medical science with which the modern graduate is not familiar, in its application to the lower animals, the cause of whose distress and pain cannot be elicited by interrogatories, because the symptoms are entirely objective, and have to be diagnosed by careful investigation and observation.

Possessed of such knowledge, then, can there be any good or just reason to doubt the fitness of the veterinarian as an educator of the people, or as a valuable aid to the work of our societies which are organized for humanity's sake.

As to the various channels through which representatives of the veterinary profession are, or can become, instructors or educators in this great and noble cause, I might mention first the regular colleges, whose object is to train young men for their life-work along the lines just indicated, who go out into the world equipped with the knowledge of human methods for the prevention and alleviation of animal suffering. Again, those of us through our connection with State universities, and A. and M. Colleges, have the privilege and opportunity of impressing upon the youthful mind, scientific truths, bearing upon this subject, and the heaven-born principles of humanity, in the care and treatment of live stock.

The general practitioner, in his daily routine of professional work, has the opportunity to illustrate and explain to his client the superior advantage to be gained by the use of rational and humane methods of treatment; and to denounce the barbarisms that are perpetrated by the ignorant, illiterate, and superstitious. And I am of the opinion, that anyone who would stand by and complacently witness the inhuman treatment of a dumb animal by one who is totally ignorant of the true condition, or its proper and legitimate treatment, is an accessory, and is guilty of a wanton act of cruelty.

There can be no doubting the fact, then, I think, that the veterinary profession of to-day is a most important aid in the accomplishment of the great end to which our humane societies are striving, but, to strengthen its hands along this line, it needs a little more appreciation and encouragement. It must be borne in mind by our people, that the day of the old "horse-doctor" is fast nearing its close, and that that worthy, who served his day and generation as best he could, according to his light, has been superseded by a profession that is as honorable as it is noble, and which has within its ranks men of as high order of education and intelligence as in any other of the learned professions.

The object of our humane societies is perhaps the noblest under heaven: preventing, mitigating, or altogether relieving the pain and suffering of those creatures who have not the opportunity nor the power within themselves to do so; and there is no organization which should be so gigantic in its membership, or so universal in its power for good. People of all ranks, whether social, political, or religious, should be on its roll, and lend their best efforts to carry on the good work. We must educate ourselves out of the too common idea that the lower animals are mere automatons, and learn to know that they are flesh and blood like ourselves. Let us all adopt the golden rule and apply it to those dumb servants which the Creator has placed within our care, for our benefit, comfort, and happiness. Then we will have the pleasing satisfaction of knowing, that in doing our duty to that noble part of the creation, we are performing a duty to the Creator himself.

I will close with two verses from a short poem on "The Hoss," by James Whitcomb Riley:

"But when I see the beast abused,
And clubbed around as I've saw some,
I want to see his owner noosed,
And jest yanked up like Absolum!

I love my God the first of all,
Then him that perished on the cross;
And next, my wife,—and then I fall
Down on my knees and love the hoss."

INHALATION PNEUMONIA.

By W. L. Williams, Professor of Surgery, and P. A. Fish, Professor of Therapeutics at the New York State Veterinary College.

A Paper read before the United States Veterinary Medical Association at Nashville, September 9, 1897.

The inhalation of foreign bodies, whether mechanical, chemical or bacterial tend usually toward bacterial invasion of the bronchial mucosæ, extending thence to the deeper parts, finally involving all tissues of the lungs, inducing suppuration, necrosis and death.

The symptoms vary greatly in detail, though in general present the ordinary signs of bronchitis and pneumonia, along with expectoration of fœtid bronchial secretions, with such variations in chest sounds as would result from the presence in the tubes of the foreign bodies inhaled or of the products of disease.

The most common causes are the inhalation of medicines during their forced administration, of food particles during coma, as in parturient apoplexy of the cow, of pathogenic organisms and their products after arytenectomy for the cure of laryngismus paralyticus in horses or other operations involving the upper air passages, by the inhalation of pus discharged into the fauces or upper air passages from abscesses, diseased teeth or tumors, by animal parasites in the air passages, by the inhalation of irritant gases, or hot smoke, or of liquid chloroform during the production of anæsthesia and by a great variety of more rare accidents ending in the lodgment of irritant foreign bodies within the air passages.

We might include also a highly important class of infections like diphtheria, in which there is a tendency for the extension of the lesions to the lungs, or of tuberculosis, actinomycosis and glanders, where there frequently occurs necrosis and softening of patches of lung tissue, which, discharging into the bronchii, tend to pass upward, only to be in part carried backward into neighboring bronchii, establishing there their typical pathological processes in that manner commonly termed auto-infection.

The handling of these cases has, as a rule, proven ineffectual, and led practitioners to recoil from them with well founded dread.

The plan of treatment usually adopted has consisted of the internal administration of expectorants and sedatives with some of the gum-resins possessing antiseptic properties and which are largely excreted by the lungs, and the inhalation of vapors, either simple or medicated.

Intra-tracheal injections of vermicides have been successfully employed in verminous bronchitis, and the bronchial mucosa has been used as a prompt and reliable absorbent surface for the administration of various drugs in solutions of small volume. The senior writer has attempted the administration of antiseptics in small volumes by intra-tracheal injection in cases of suppurative bronchitis, and has endeavored to aspirate suppurative areas of the lung and inject the cavities with antiseptics, but without noteworthy success.

Beaumont Small (Handbook of Med. Sci. IX, 756) employed a 1 to 500 solution of pyoktanin in the form of intrapulmonary injection of 8 to 16 minims in pulmonary tuberculosis, which was reported well borne, except that when reaching the bronchii it caused violent coughing, but was said to have lessened the hectic condition and diminished the number of bacilli in the sputa.

We have been unable to find record of any attempts to administer per trachea for therapeutic purposes, large volumes of liquids either as mechanical detergents or as topical or general antiseptics, the filling of the lower air passages with liquids being associated in the popular mind with drowning.

Opposed to this fear existed the well-known fact that in partial drowning the water which had well filled the air passages was in many cases partly drained out, largely absorbed, and the patient left little worse for the experience beyond the physical shock.

It had also been shown experimentally that large quantities of water could be slowly introduced into the lungs through the trachea and become absorbed without untoward results, while a like volume introduced rapidly and persistently would produce profound disturbance and eventually death. Notwithstanding that absorption occurs more rapidly in the lungs than elsewhere in the body, excess of fluid effects material changes not only in the respiratory epithelium, but also in the blood in which any change must necessarily affect all other tissues.

In an experiment at Lyon, France, under the direction of Gohier, 30 litres (7½ gals.) of water were injected into the trachea of a horse without causing death. In another case it required 40 litres (10 gals.) to kill the animal by suffocation. Colin (1873, Vol. 2, p. 109) experimenting along the same line introduced into the trachea of a horse by means of a special apparatus, 6 litres of water per hour at a temperature of 30 to 35 degrees C., which was continued for 3½ hours, making a total of 20 litres, after which the animal was immediately destroyed, the bronchii quickly opened, but found empty, all the water having been absorbed.

In another horse he introduced into the trachea 25 litres of water in six hours, and bled him three times at intervals of two hours, obtaining 6 kilogrammes ($13\frac{2}{10}$ lbs.) of blood. The respiratory mucosa absorbed all the water without apparent inconvenience to the animal.

Intra-tracheal medication, though not in general use, has much to recommend it when rapid effects are desired, especially in those pulmonary diseases where antiseptics are indicated.

Among the agents best adapted for this use, is hydrogen peroxide, which is antiseptic, non-toxic, deodorant, styptic, and in dilute solution non-irritant.

With these facts and suggestions before us, two cases were presented at the clinics of the New York State Veterinary College, which served to invite more radical attempts at intra-tracheal medication than had previously to our knowledge been undertaken, the results of which were to us at once so unexpected and instructive, that we felt ourselves warranted in communicating them to the profession, though admitting that our experiments were preliminary and quite incomplete.

Case I. was an adult roadster gelding, vigorous and sound so far as known except well marked laryngismus paralyticus, on which account he entered the clinic for the removal of the left arytenoid cartilage. After careful dieting he was cast for the operation on June 3d. General anæsthesia was omitted and cocaine used to produce local insensibility. A tracheotomy tube was inserted some twelve inches downwards from the larynx, after which the arytenoid cartilage was excised in the ordinary manner by the senior author of this paper. The patient fought viciously throughout the operation, and the day being warm he became very hot and bathed in profuse prespiration.

The operation completed, the tampon trachea tube was inserted and the operation field tamponaded with absorbent cotton and iodoform.

When released, the patient required assistance to regain his feet, and was so greatly exhausted that he was placed in slings.

On June 4th the tampon and canula were removed, the operation field carefully sponged with 1-1000 sublimate solution, and the horse was permitted to drink a goodly quantity of milk, which he apparently relished. From this time until June 10th the patient seemed bright, drank liquid food with avidity, temperature was normal, and all appeared well except an abundant and ever-increasing fœtid purulent discharge from the nostrils and tracheal openings.

On June 10th he appeared weaker and had fallen down, but was quickly assisted to his feet, and the fœtor of tracheal discharges still increasing, we injected small quantities of hydrogen peroxide into the trachea, which cause the discharge of some froth.

On the 11th well-defined suppurative broncho-pneumonia was noted, the patient was rapidly failing, and the area of disease was so great that the intra-tracheal injection of small volumes of antiseptics could promise no benefit. At this juncture

Professor Law suggested that as an experiment on a hopeless case we might, in the light of the experiments noted above, attempt the administration of antiseptics by the intra-tracheal injection of large volumes of liquids and permit them to be absorbed from the pulmonary mucosa. We prepared a tepid solution consisting of 5 litres of water, 30 grammes sod. chlor. and 60 c. c. of the commercial solution of hydrogen peroxide.

Placing this in an irrigating reservoir at an elevation of ten feet above the animal, with the liquid gravitating downward through 3/8 inch rubber tubing and escaping through a 1/4-inch nozzle, the latter was inserted in the tracheal opening and the liquid allowed to flow into the trachea in a full stream until about one litre had entered, when by an expulsive effort the greater part was thrown out through the tracheal openings, mouth and nostrils, the liquid emerging frothy and carrying with it fœtid discharges. As soon as that which had been thrown into the trachea was well out the process was quickly repeated until within 10 minutes the entire 5 litres of liquid had passed into the trachea, the greater part of it having been thrown out again, carrying with it much putrid material.

This was accomplished without apparent distress to the patient, causing only a moderate amount of coughing with each expulsive effort, and leaving him at the conclusion of the ordeal apparently without additional fatigue and with the fœtor of his breath very effectively diminished, his air passages clean and to all appearances the local conditions materially improved. The patient died on the following day without our having repeated the treatment, and the autopsy showed extensive necrotic broncho-pneumonia.

The only result gathered from the case was the facility with which large volumes of liquids could be rapidly introduced into the trachea without producing inconvenience to the animal worthy of remark, at the same time thoroughly flushing out the air passages and measurably deodorizing and disinfecting them.

Case II. was in all material respects like I operated upon on June 4th this year, in the same manner as No. I. by student H.

The patient struggled less violently than I., and was less fatigued after the operation.

Tampon and tampon canula applied as in I. and removed on following day.

Deglutition very imperfect, almost all fluids taken into the pharnyx being expelled through the nostrils and tracheal openings.

From June 6th to 12th the loss of power of deglutition continued unabated, and there were no notable changes except that gradually increasing fœtid discharges took place from the nostrils and tracheal and laryngeal openings. By the 13th of June the patient had become exceedingly weak, having been practically without food, either solid or liquid, for nine days. At this stage the tracheotomy tube which had been removed on June 6th was replaced as a precautionary measure, and the patient allowed to eat succulent grass and soft bran and linseed mashes, of which he partook sparingly, much of it dropping out through the laryngeal opening. By June 17th the breath had become very fœtid, which on the 18th had become excessively stinking.

An examination of the tracheal wound revealed a necrotic piece of cartilage which was excised. We then introduced into the trachea 5 litres of tepid water, with 30 grammes sod. chlor. and 60 c. c. solution of hydrogen peroxide, which flowing in rapidly was largely expelled, flushing thoroughly the air passages, pharynx and surgical wounds, cleansing and deodorizing the parts.

On the 19th the fœtor seemed so much less that the irrigation was omitted, but on the 20th the fœtor had increased and the lungs were again flushed out like on the 18th without inducing any marked discomfort. The intra-tracheal treatment was now discontinued.

After this the patient seemed to improve slowly if at all, in strength, appetite and power of deglutition, and was greatly harassed by a persistent cough. The tracheotomy tube was removed on June 25th, as the power of deglutition now seemed restored, and by July 14th the tracheal and laryngeal wounds had closed, but the cough continued, the patient remained emaciated and weak, the appetite indifferent, the breath had again become fœtid, especially evident during his fits of coughing, during which he expectorated through the mouth or expelled through the nose dirty gray very fœtid discharges. As there was evidently still some serious pathological condition present, we re-opened the laryngeal and tracheal wounds for examination, finding each completely healed and all adjacent parts apparently normal.

We had barely completed our physical examination of the parts when in a fit of coughing he expelled through the laryngeal incision an excessively fœtid dirty grayish tenacious mass which it could now be no longer doubted had emanated from low down within the bronchii and indicated local purulent broncho-pneumonia.

We then began anew the irrigation of the bronchii, the volume, composition and mode of administration of the fluid remaining the same, and being repeated daily.

On the 15th we began the internal administration of quinine sulphate, ʒ i, nux vomica grs. xx, and arsenic grs. ii, twice daily.

At the first expulsive effort during each irrigation, the patient expelled with the water about 10 c. c. of a dirty gray very fœtid tenacious discharge, and on July 17th, he expelled a piece of fœtid necrotic tissue estimated to weigh 2 grammes.

On July 18th, the volume of water was reduced to 3 litres, the sodium chloride correspondingly, leaving it at 6%., while the volume of hydrogen peroxide was left unchanged.

On July 19th, five days after the beginning of the regular daily irrigations, the fœtor of the expectorated mass had greatly diminished, while its color had changed to almost that of ordinary mucous.

July 20th no fœtor could be detected in expectorate, nor in expired air.

July 26th, the hydrogen peroxide was doubled, which caused more coughing and resulted in increased discharge of bronchial secretion on the 27th and 28th, though the hydrogen peroxide had been reduced on the 27th to the original amount and was so continued thereafter.

By July 31st the patient had markedly improved in every way, was gaining rapidly in flesh, the cough was less frequent, the bronchial discharge less, and seen practically only at times of irrigation, and the animal would run and play in the paddock.

The use of the tracheotomy tube, through which injections were made, was dispensed with on July 30th and the nozzle of the injecting tube inserted directly in the trachea with an apparent advantage in causing less coughing.

On August 2d the patient had so far recovered that treatment was discontinued and the tracheal wound permitted to close.

August 7th he was hitched to a buggy and tested at a rapid pace up a steep hill, and found apparently much improved in wind.

On August 12th he was driven home, a distance of twenty miles, without showing signs of fatigue. On August 31st the owner reported the patient much improved in flesh, practically free from cough, almost free from respiratory difficulty when driven rapidly, and taking exercise work daily without fatigue or other difficulty.

While our experiments were very limited in extent, and can be regarded only as preliminary and suggestive, some facts have been established which appear to us of interest.

It has been shown that large volumes of water can not only be introduced slowly into and absorbed from the lungs, but that such quantities can be introduced into the trachea and bronchi at a rapid rate, if the trachea is open, and be thrown back through trachea, larynx, pharynx, mouth and nostrils, thoroughly flushing these parts, constituting thereby our most efficient cleansing procedure. We have shown that the air passages tolerate quite well at least one antiseptic, hydrogen peroxide.

Of great interest it appears to us, is the fact that on July 17th, during our irrigation we flushed out a large sized piece of necrotic tissue which must have been lodged low down in the bronchi. In each case we apparently cleared the bronchi, at least the larger ones, of any foreign matter, and we certainly are warranted in believing that the irrigation of the lungs exerted a very favorable influence on the course of the disease.

Our efforts suggest a much wider range of usefulness. In accidental inhalation of drugs during drenching, it seems that irrigation may in safety be depended upon to wash out oils, to dilute and wash out such irritants as alcohol, turpentine, whiskey, chloral, etc., while in case of foreign bodies of considerable size, it offers us a means for their removal, quite worthy of a trial. It seems quite possible that good results might be had by this plan in such affections as pulmonary tuberculosis where large softening areas communicate with, and discharge into bronchi, and in all forms of suppurative broncho-pneumonia, and possibly also in extensive diphtheritic invasion of the air passages.

Perhaps one of its most direct uses will be found in the prevention of inhalation pneumonia after arytenectomy, as it affords us not only a safe plan for thorough irrigation of the field of operation, but the fluid passing down the trachea into the bronchi flush out and destroy any pathogenic organisms which have been inhaled.

We do not say that our plan, formula or rate of administration is the best, other antiseptics may be better and other rate or details of administration may be far superior.

We do not know if it is better to have a tracheal or laryngeal opening or not, though the absence of a counter-opening might, it seems to us, lead to dangerous spasmodic closure of the larynx.

The rate of administration can evidently be varied. We did not know at the beginning of our experiment the rate of administration by the experimenters quoted, and departed widely from their plan by introducing the liquid at a very rapid rate, quite too rapid to permit of total absorption, and in that way learned that we could, without discomfort or injury, have it quickly expelled, and thus we learned by comparison with Colin's and Gohier's experiments that we may at our option, by varying the rate of administration, either have the liquid absorbed or rejected, or partly absorbed and in part expelled. At some times we apparently had 50 per cent. or over absorbed, though always given rather rapidly, while in other cases nearly all appeared to be rejected.

We have been led to hope that in spite of the meagre experience upon which we have based our communication, the facts and suggestions will suffice to lead others to study the plan of treatment herein outlined, with a view to developing a successful method of therapeutics in this heretofore baffling group of affections.

INTERESTING TUBERCULIN REACTIONS.

By F. S. Schoenleber, M. S. A., D. V. S., Assistant State Veterinarian,
McKillip Veterinary College, Chicago.

During the month of September, 1897, the attention of the State Board of Live Stock Commissioners was called to a herd of dairy cattle at Hebron, Ill. From the fact that the owner had "lost half a dozen cows during the summer," and from the condition of the remaining portion of the herd it was evident that tuberculosis was present, although it could not be detected in but perhaps two or three cases. A tuberculin test was therefore instituted October 26–28. There were thirty-five milch cows in the herd, all grade Holstein and Shorthorn. Thirty-two were kept in two separate barns; No. 1 contained seventeen head, No. 2 fifteen. The sanitary conditions were, however, quite different in the two cases. Barn No. 1 was so filthy that every time an animal moved the slush would ooze out from between the boards of the floor, while barn No. 2 was well kept and comparatively quite clean. Of No. 1, fifteen out of seventeen reacted, or 88.2 per cent., while of No. 2, only ten out of fifteen, or 66⅔ per cent., gave evidence of the disease. Whether the percentage of the animals affected in the incipiency of the disease in the two barns in this case had any connection with or relation to the sanitary conditions of course cannot be positively stated; however, it looks very suspicious, as there was more or less irregularity in the temperatures of nearly all the animals in barn No. 1. The reactions in No. 2 were nothing out of the ordinary. In No. 1 the most conspicuous were the following three:

No. 482, Shorthorn, weight 1050 lbs.; temperature before injection, Oct. 27, 10.30 A. M., 102.1; 2.30 P. M., 102.2; 5 P. M., 102.2. Injected at 7.30 P. M. Oct. 28, 8 A. M., 106; 10 A. M., 105.4; 2 P. M., 98.1; 4 P. M., 100.2—a maximum increase of 3.3°.

No. 487, Shorthorn, weight 1100 lbs.; temperature, Oct. 27, 10.30 A. M., 101.4; 2.30 P. M., 100.4; 5 P. M., 101.2; Oct. 28, 8 A. M., 104.3; 10 A. M., 104; 2 P. M., 102.2; 4 P. M., 102. Maximum increase of 2.4°.

No. 492, Shorthorn, weight 1150 lbs.; temperature, Oct. 27, 10.30 A. M., 102; 2.30 P. M., 101; 5 P. M., 101.2. Oct. 28, 8 A. M., 103.2; 10 A. M., 104.3; 2. P. M., 102.4; 4 P. M., 102. Maximum increase of 2.3°.

The animals were all treated alike; injected at 7.30 P. M., Oct. 27, and watered at 12 M. In No. 482 the temperature at 5 P. M., before injection, was 102.2°; the following morning at 8 A. M. it was 106, and at 2 P. M., six hours later, it had fallen to 98.1°, or nearly eight degrees, an average of over one degree per hour for six hours. The deviations from the regular reaction in Nos. 487 and 492 were not quite so great. The condemned cattle (the whole number which reacted) were shipped to the abbatoirs at the Chicago stock yards, Nov. 2d, slaughtered under the direction of the State Veterinarian, Dr. C. P. Lovejoy, and the State Board of Live Stock Commissioners, and through their courtesy the autopsies were held by the senior class of the McKillip Veterinary College, under the immediate supervision of the Dean. The results showed the disease in all in various stages of development, from the localized miliary tubercle in the lung tissue or lymphatic gland to generalized tuberculosis in the viscera and glands; Nos. 482, 487 and 492 presenting no post-mortem deviations from the average of the herd ; merely localized tubercles in the lungs and lymphatic glands. The cows were all in fair flesh, considering the scarcity of pasture during the summer. Gestation had advanced from one to about eight months in most of the herd.

The peculiar deviations in the above temperatures led to a very careful ante as well as post-mortem inspection, but no further lesions were detected in either. It is regretted that circumstances were such as to prohibit the taking of the temperature in No. 482 for some days following the test. In the face of all the difficulties, however, the results indicate to a great degree how far the test may be relied upon in doubtful or irregular cases, and a study of the thermal lines in the chart made from the temperatures of the animals of the different barns certainly shows a debilitating influence at work somewhere in the system of animals from barn No. 1, due no doubt to the filthy conditions of the sourroundings.

VETERINARY JOURNALISM.

By W. H. Dalrymple, M. R. C. V. S., Baton Rouge, La.

Incorporated in the Report of the Committee on Intelligence and Education of the U. S. V. M. A., at Nashville, Tenn., Sept. 8, 1897.

Journalism, as an important medium of professional education, is a subject which should ever be kept prominently before the mind of each individual member of our profession. There is the possibility, or perhaps I ought to say tendency, on the part of many of us to forgetfulness of this fact, with the result that we are apt to retrogress rather than progress along the different lines of our professional work. There is no profession or business to-day that can expect to succeed without its periodical literature. Text-books, devoted to either branch of medical science, are invaluable, in that they contain the fundamental facts, so to speak, on which practice is based, but in these days of such wonderful advancement, more especially perhaps in the department of medicine, a considerable portion of a text-book may be said to be out of date by the time it is placed upon the market. This would be an exceedingly unfortunate occurrence for the profession were it not that our journals come in to fill the void. The veterinarian at the present day who is not a subscriber to one or all of our journals, and perhaps to one or more of the European periodicals, is behind the times; and by being in such a position, is not only doing an injustice to himself, but to his profession.

I am of the opinion that the veterinarian should subscribe to a leading medical journal as well as to those of our own branch; it keeps him in touch with what is going on in the sister profession; and by having a little more extended information on the general subject of medicine, it not only adds to his own knowledge, but it gives him a better standing with the members of the medical profession with whom he may be brought into contact, when he is able to discuss intelligently up-to-date topics having a direct bearing upon their subject. I have always been an advocate of the veterinarian, when he has the opportunity, seeking the friendship and association of medical men. I think a great deal of the ignorance which prevails in certain sections of the country, with regard to our profession, would eventually be dispelled through the influence of the medical profession, especially if they had a more intimate knowledge of us and our professional work. It has been stated that out of the entire veterinary profession in the United States, only about one-third of its members subscribe to the professional journals. This may, at first sight, appear an unimportant matter, but when duly reflected upon, is in reality a serious state of affairs. At the present time, although the information contained in our journals is of inestimable value to those who subscribe to them, these monthly periodicals are conducted at great financial loss; and in fact one of them has had to be discontinued altogether for lack of support. This want of appreciation on the part of a large portion of the profession is to be deplored, for the reason that it not only acts as a check to professional progress in the non-subscriber, but it deprives those who do subscribe, and who are anxious to keep up with the professional advancement of the day, of a great amount of valuable matter, which our journals are unable to avail themselves of for lack of the necessary support. In other words, it curtails the scope of journalistic work, thereby depriving the profession of a great amount of what might be termed its most needed sustenance, viz.: current, up-to-date literature gleaned from various sources throughout the professional world.

No better method, it seems to me, could possibly be devised to so rapidly advance the interests of the profession than that of well conducted journalism. "The power of the press" is a saying as true as it is trite; and there is no valid reason why the same should not be said of our professional press from both a social and a legislative standpoint. One of the most pleasing features which a profession such as ours ought to be able to afford is sociability. This can be largely cultivated through the medium of our journals. As a body, we frequently require legislation to obtain some needed reform. This could often be accomplished through the same channel—our press—more especially if it had the sympathy and support of a solid profession. There can be only one of two reasons why the veterinarian fails to give his support to the journals devoted to his profession, and necessarily to his individual benefit; and the first of these is a lack of interest in his own intellectual development—from a professional point of view—and in the progress and success of the profession, as such; or, that he has persuaded himself that he cannot afford $3 a year for a journal, the value of which, to him, it would be extremely difficult to estimate.

If we expect to increase in strength as a profession, we must endeavor to increase and keep increasing the power of our journals in every department; and this can only be accomplished by the sympathy and hearty support of the profession as a whole.

It is only by liberally contributing, as well as subscribing, that we can expect to obtain and maintain a high standard of excellence in our professional journalism. It is to be hoped that each succeeding meeting of the U. S. V. M. A. will have the effect of inspiring new life in the profession throughout the country, with regard to this important matter; and that each individual member will feel it to be his duty to lend his aid to the support of those professional periodicals, which are of such immense value, and which he has it within his power to greatly enhance.

REPORTS OF CASES.

EXTRACTS FROM THE CLINICAL RECORDS OF THE AMERICAN VETERINARY COLLEGE HOSPITAL.

By C. E. Clayton, D. V. S., Assistant Surgeon.

ANOTHER CASE OF RUPTURE OF THE CORACO-RADIALIS—OSTEO-POROSIS.

On Oct. 15th a gray gelding was given to us by Dr. Robertson for a clinic and post-mortem. His condition was as follows: Osteo-porosis, manifested by enlarged maxillary bones. The scapulæ, instead of being oblique, had assumed an horizontal direction, forming a right angle with the humeri, which seemed to retain their normal position. This situation of the scapulæ caused a lessening in height of the animal of about five inches and a corresponding increase in length. At times he would try to straighten up, and when doing so his attitude would become almost normal, and on sinking back again it seemed as if his body were falling downward and backward between his forelegs, so that the anterior extremity of the sternum would recede until it was eight or nine inches posterior to its normal position, leaving a very large depression between the humeri. The scapulo-humeral articulations were very much enlarged, but not so very painful. When pressure was applied upon them, from forwards back, the scapulo-humeral angle seemed to increase and the scapulæ temporarily resumed their oblique and natural position.

He was destroyed Oct. 9th, and a very careful post-mortem made.

The muscles were dissected away one at a time, and when the articulation was exposed, it was found that on the right side the coracoid process of the scapulæ had given way, together with an immense amount of inflammatory exudation, which was becoming organized and a fibrous union of the fracture was taking place; the tendinous portion of the coraco-radialis was undergoing fatty degeneration; the articular head of the humerus was ulcerated and of a pale blue color. On the left side the tendon of the coraco-radialis had ruptured about three-quarters of an inch from its attachment to the coracoid process and another partial rupture just after it passes over the bicipital groove; the same inflammatory exudation, partially organized, existed around this articulation, together with ulceration of the head of the humerus. On boiling the bones they exhibited the characteristic lesions of osteo-porosis.

On looking over the literature at my disposal, I found only one similar case to this, recorded by Dr. E. Nesbit, late House Surgeon to the Hospital Department of the American Veterinary College, in the October issue of the AMERICAN VETERINARY REVIEW, Vol. XV., where the question was put: "Were the rheumatoid symptoms presented related to the nature of the injury?" Prof. Möller, in his "Operative Surgery," refers to the Nesbit case without making allusion to what the cause of such trouble might be. It seems to us that both the Nesbit and this new case have probably but one cause, viz., the condition of osteo-porosis. True, it was only well marked and diagnosticated in this last case, but if it was not positively established in Dr. Nesbit's, would it be improper to admit that the rheumatoid lameness characteristic of his patient was but symptomatic of osteo-porosis, even with the absence of maxillary lesions (supposing that they were looked for)?

TO ADD TO THE VALUE OF MEDIAN NEURECTOMY.

In reporting these cases it is not on account of any particular merit to be accorded them, but simply to add to the already accumulated evidence of results following this operation, and, therefore, strengthening its claim to recognition in those cases which have failed to answer to the usual form of treatment, such as firing and blistering, either one or more times, etc.

Case I.—A bay gelding, very lame on the walk, having a large bony deposit on the front and inside, as well as chronic tendinitis, on near foreleg. Operated on December 24, 1896, and when the animal was allowed to rise, walked and trotted sound.

Case II.—Bay gelding, very lame on the walk, having bony deposit at coronet, sidebones, and very much thickened tendons on near foreleg. Operated on January 8, 1897, and when allowed to rise, walked and trotted sound.

Case III.—Chestnut gelding, slightly lame when walking and very lame when trotting, having a splint the size of a large egg on the lower third of inside of the cannon, involving the tendons on the back of the cannon. Operated on May 4, 1897, and when allowed to rise and trotted the lameness which existed could only be detected by an experienced person.

Case IV.—Bay gelding, with intermittent lameness for a period of two years and having a splint extending from the inside to the outside of the leg and close to the knee. Operated on July 20, 1897, and when allowed to rise trotted sound.

Case V.—Bay gelding, destined for dissection purposes and exceedingly lame even when walking, having bony growth at fetlock, navicular disease, contracted and swollen tendons. Operated on some time in January, 1897. When allowed to rise, showed a slight trace of lameness on the trot; he was then destroyed.

The first three cases were ordinary work horses, too lame to work even at a walking pace; the fourth was a valuable coach horse. In these four there was some swelling and lameness the following day or two, which gradually subsided in the course of ten to fourteen days. They were put to work and have worked constantly up to the time of writing and showed no signs of the return of lameness. The fourth case, which on account of his blemish and peculiar form of lameness, was, so to speak, worthless before the operation, has been since sold at a very high figure.

EPILEPTIFORM FITS DUE TO PARASITES.

On October 15th, a collie pup was brought to the hospital suffering with epileptiform fits; two hours later another one was brought with the same symptoms, the owner saying that they were the only ones left out of a litter of seven, the five which had previously died having presented the same symptoms as the two which were brought to the hospital. They were placed under potassium bromide to quiet the nervous excitement. As soon as this was accomplished, castor oil was administered.

The one which was taken in first died the same night, and on post-mortem the following morning ninety-four ascarides (*A. Marginata*) were found between the pharynx and appendix, and in some places they were gathered together in masses large enough to distend the intestine to about two or three times its normal diameter. The other one died the following afternoon, and on post-mortem fifty-nine worms were found of the same variety and in the same localities.

The owner having two more dead ones at home, I requested that they be sent to me, as my curiosity was fully aroused. Their post-mortems revealed sixty-one in one and sixty-two in the other. A like condition probably existed in the other three which I did not see.

In mentioning these cases, it is not on account of the rarity of finding parasites in the gastro-intestinal tract, giving rise to the symptoms observed, but for the great number found in all of the pups which I had the opportunity to examine after death; also their being all of the same litter and only *eight weeks old.* I have held a great number of post-mortems, but have never found parasites in such great quantities.

THE USE OF ESERINE IN PARTURIENT APOPLEXY.*

By W. E. McCray, Oil City, Pa.

I desire to call your attention to four cases of parturient apoplexy that I have attended within the last six months. As you are all familiar with the pathology and symptoms of this disease I will not enter into details.

Case No. 1.—A thoroughbred Jersey cow had her calf at 8 o'clock one evening and went down about 3 o'clock the following morning. I saw her about 9 o'clock the same morning. This was a well marked case with all the symptoms prominent, paralysis of the posterior extremities and contraction of the muscles of the cervical region, with head crooked tight to flank, emitting a grunt at every respiration. The following line of treatment was adopted; a purgative was administered, a mustard-plaster applied to the back, hot water injections, and ice applied to the head. Stimulants were given every two hours. About five o'clock in the evening of the same day I was called again. The animal was undoubtedly no better, but coma more pronounced. I gave her one grain of eserine sulphate intravenous injection, and applied the pump. Inside of twenty minutes the tension of the cervical muscles relaxed and she showed prominent symptoms of the physiological actions of this drug. She had two evacuations of hard fæces and then seemed to rest easier with head erect. The following morning I gave her one half grain more of the drug and by noon she was up on her feet. The subordinate treatment consisted of stimulants with nux vomica in small doses.

---

* Read before the Pennsylvania State Veterinary Medical Association, September, 1897.

Case No. 2.—A grade Durham that went down some time the second day after calving. Was seen by me about six hours after going down. I at once administered one and one-quarter grains of eserine, applied the pump. She responded to the action of the drug. I also gave her a purgative, ordered stimulants every hour. She was up on her feet in six hours and eventually made a good recovery.

Case No. 3.—An old grade Jersey. Had gone down the third day after calving and had been down twenty four hours when seen by me. The owner said he had given her "two quarts of crude oil and two pounds of salts." I gave her treatment the same as in other cases and she was up on her feet the next morning and lived six days. She then died with mechanical pneumonia due to to the administration of the oil and salts.

Case No. 4.—A high bred Jersey. Had her calf in the morning. I was called that evening, the owner saying that "something ailed the cow." She was down by the time I got to the field. I immediately gave her treatment as heretofore mentioned. That night she lay in the rain. I called the next morning, gave her the second injection and hauled her to the barn on a stone-boat. About eleven o'clock that morning she rose to her feet, gained strength during the day and when I made my last visit that evening she was up and the calf was sucking.

In bringing these cases to your notice I do not wish to be understood as advancing any new ideas, but simply to give you my experience in the action of this drug in the treatment of parturient apoplexy.

PUNCTURED WOUND OF THE BREAST, WITH A PECULIAR COMPLICATION.*

By CHARLES S. ATCHISON, Student, Brooklyn, N. Y.

On July 12 last, a gray gelding, eight years old, about sixteen hands high, was admitted to Dr. Berns' infirmary, suffering from quite an extensive punctured wound of the breast, and the external opening of which was about on a line with the scapulo-humeral articulation, the tract extending downwards and backwards for fully sixteen inches. Owing to the nature of the injury, suturing by any of the various methods employed was quite out of the question; consequently the only thing to be done was to assist nature in doing her work by treating the wound antiseptically. This was done by daily irrigations with a solution of carbolic acid of the ordinary strength, but in spite of my care the granulating process did not progress either rapidly or favorably. Nevertheless, I kept up the treatment, confident that antisepsis would in the end win the battle.

---

*Read before the Veterinary Medical Association of the American Veterinary College, Oct. 21, 1897.

About fourteen days after being admitted, a large swelling made its appearance upon the animal's side; this swelling was eight inches in diameter, and was situated over the tenth rib, about twelve inches below the vertebral column, and was very hot and painful upon pressure. To this swelling I had hot fomentations applied at regular intervals during the day for two days, at the end of which time it appeared as a large abscess, which I opened, and from which just seventeen ounces of pus escaped.

Upon exploring the resulting cavity with my finger, I felt something which I at first thought was a portion of a fractured rib, but upon its extraction it proved to be a piece of leather three inches long and three-quarters of an inch wide. At first I was at a loss to account for the presence of this piece of leather in such an unaccustomed place, but the circumstances of the accident furnished a clue, and it proved to be a piece of the collar which the horse wore at the time of the accident, it having entered with the shaft in the latter's course.

After the removal of this piece of leather, I probed the cavity and found a tract running forward, which my longest probe failed to explore fully. Realizing that "necessity is the mother of invention," I made a probe of a piece of bale-wire and by its aid ascertained that the tract led forward and downward toward the bottom of the opening made by the shaft; seeing this, I introduced another probe into the original wound and discovered what I had already suspected—that the two tracts were continuous.

After this the wound healed as readily as could be expected, considering the poor drainage afforded, and the animal was discharged.

But certain questions are still unsettled in my mind concerning the migration of that piece of leather. In the first place, why did it move at all, and, in the second, why did it not follow the laws of gravitation instead of pursuing an upward course and terminating fully six inches above the opening of the original wound?

INOCULATIONS AGAINST RINDERPEST.

Through the courtesy of Dr. William Sheppard, of Sheepshead Bay, L. I., we have received a copy of the *Umtata* (Cape Colony) *Herald* of Oct. 2, giving an account of the meeting of the Rinderpest Commission, at which Dr. Gray, Government Veterinary Surgeon, explained the details of inoculations against that scourge. Dr. Gray was formerly assistant to Dr. Sheppard, and went to South Africa some six or seven years ago. We reproduce the salient points of his report to the Commission:

"Dr. Gray said that as it took from six to eight weeks to fortify animals up to the point of obtaining serum from them, he had arranged to get a supply from Kimberly sufficient he hoped to keep them going in the meantime. He then proceeded to state the method of fortifying animals so that serum could be obtained from them, and this process as given in the *Government Gazette* of 24th Sept. is as follows:—A salted animal is obtained, either one naturally salted or one which has been given the rinderpest after having been slightly immunized. As soon as the animal has recovered from the disease, it is injected with 100 c.c. of virulent blood. This generally produces a febrile reaction. As soon as the reaction is over, 200 c.c. are injected, and the dose is thereafter increased to 500, 1000 2000, 3000 and 4000 c.c. at once, always waiting for the reaction from the last inoculation to subside before administering the blood. Dr. Gray continuing said that from such a salted animal 30 c.c. of defibrinated blood or 20 c.c. of serum was an effective dose for cattle in which the first symptoms of disease had just appeared, and the best results were always obtained when each animal in a herd was inoculated just when the first signs of rinderpest were visible. It was, he said, immaterial where the injection was made provided it was in a place where there was loose flesh. Great care had to be taken in inoculating the animals which were being prepared for the purpose of supplying serum, as the injection of doses up to 3000 c.c. into one place was inclined to produce abscess or such-like irritation.

"The Chairman then read to the meeting a large portion of a report by Drs. Turner and Kolle published in the *Government Gazette.* In the course of this report Drs. Turner and Kolle state, that during their investigations, in continuation of Dr. Koch's experiments, they had devoted special attention to the possibility of procuring an efficient serum. Their experiments had been carried on both with defibrinated blood and serum and the action of these two fluids they found was precisely similar. Serum which is defibrinated blood minus the red corpuscles is made by allowing the blood to coagulate and the clot to contract. It can with ordinary care be prepared so that with the addition of 0.5 per cent. of phenol it may be bottled and kept for a long time. As an illustration of the way in which serum may be expected to act in infected herds, they allowed 47 animals to take the disease spontaneously. The serum was injected at various periods after the commencement of the fever, with the following results:

Day of fever when Inoculated.	No. Inoc'd.	No. Alive.	No. Dead.
1st day	11	11	0
2d "	4	4	0
3d "	7	5	2
4th "	9	4	5
5th "	8	0	8
6th "	5	1	4
7th "	2	1	1
9th "	1	1	0
	47	27	20

"The serum, or defibrinated blood, can be made to give a long immunity if it is used after the animal has become infected, or, if the animal be purposely infected after the use of the blood or serum. In regard to the question of a process to give a prolonged immunity to animals not already infected with rinderpest, the report goes on to say that serum and not defibrinated blood must be used. The experiments carried out show that it is necessary to insure actual infection. The herd in which several cattle have died after serum inoculation has usually been found to be in a more satisfactory state than the herd in which none have died. The object, therefore, is to insure infection of as severe a character as possible, and at the same time to administer the serum in such a dose as to insure the safety of the animal. This object may be obtained by injecting 1 c.c. of virulent blood on one side of the animal and immediately after 5, 10, 20 c.c. of serum on the other side. The animal thus treated suffers from a modified form of the disease, and is salted. The following table gives the result of an experiment made upon 29 animals:

No. of Animals.	Dose of Serum.	No. died.
11	20 c.c.	1
12	10 c.c.	8
6	5 c.c.	6

"In regard to the treatment of herds already inoculated with Koch's bile, and in which the disease usually, although not invariably, appears again after a short time, Drs. Turner and Kolle state that these beasts respond readily to the action of serum, but that they must be sick at the time the serum is injected, otherwise they do not salt."

FOOT-AND-MOUTH DISEASE.

Loeffler and Frosch (*Deutsche Medicinische Wochenschrift*, September 23, 1897, p. 617), constituting a commission appointed to investigate foot-and-mouth disease, report the following summary of the conclusions reached by them: (1) All of the bacteria hitherto described as the exciting cause of this disease have been accidental associations. The disease can be induced by inoculation with sterile lymph obtained from the vesicles, which contains morphotic elements of various kind. Protozoa have not been demonstrated as the causative agents. (2) Beef and swine have been also shown experimentally to be especially susceptible to the disease. Sheep and goats could not be infected artificially at first, as well as dogs, rabbits, guinea-pigs, ordinary mice, field-mice, and fowl. (3) The most certain mode of infection consists in the injection into the circulation of lymph obtained from vesicles. Infection could be induced also by injection of such lymph into the abdominal cavity and into the muscles, as well as by its introduction into the mucous membrane of the mouth previously injured by puncture. Uncertain results followed subcutaneous and cutaneous inoculation. In animals inoculated by intravenous injection vesicles appeared first in the mouth, and in milch cows upon the udders, after the lapse of from one to three days—in accordance with the amount and virulence of the lymph—in conjunction with febrile manifestations, and one or two days later vesicles appeared, first upon the extremities. Both sets of vesicles are thus to be attributed to virus circulating in the blood and not to direct infection from the skin. With the development of the vesicles the virus disappears from the circulation. (4) To effect inoculation with certainty, one-five-thousandth of a cubic centimetre of fresh lymph was sufficient. Smaller quantities up to one-twenty-thousandth cubic centimetre were uncertain in their effects, and still smaller quantities were innocuous. (5) The lymph was rendered innocuous when heated to 37° C. for twelve hours, or to 70° C. for half an hour, and also on drying for twenty-four hours at summer temperature. Preserved in refrigerators, the lymph inclosed within capillary tubes retained its virulence for fourteen days, at times even longer. Individual germs proved capable of continued existence for eight or nine weeks. Large quantities of lymph were necessary to induce infection. (6) In opposition to prevailing views it was demonstrated that immunity was conferred upon infected animals two or three weeks after recovery from an attack. On the one hand some animals are naturally immune, while on the other hand others are extremely susceptible. The latter are not rendered immune by a single attack, but more fully so by a second. The blood of immunized animals contains substances which when mixed with fresh lymph seem capable of neutralizing the effects of the latter in susceptible animals. (7) Beef and swine can be immunized artificially by means of injections of lymph warmed until its infectiousness is removed, as well as by injection of mixtures of lymph and blood from immune animals. The majority of animals were rendered immune by a single injection, which apparently induced no bad effects. (8) It thus appears scientifically demonstrated that foot-and-mouth disease can be successfully treated by means of protective inoculation. —(*Medical Record.*)

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By W. V. Bieser, D. V. S., New York City.

Intravenous Injection of Normal Salt Solution in Toxæmias and Extensive Hæmorrhages.—In the treatment of toxæmias either the result of specific bacterial infection or other poisons, and in excessive hæmorrhages the author recommends the intravenous or subcutaneous use of normal salt solution. The best results were obtained in collapse following severe hæmorrhage in that the normal salt solution or artificial serum took the place of the blood lost and excited a hæmostatic effect. Also in septic infections and in toxæmias it is of value, as can be seen in the following case: A Clydesdale mare, weighing 1300 pounds, gave birth to a dead foal and developed septic metritis. S. abstracted eight quarts of blood with slight improvement in the symptoms. The pulse, until now tense in character, became soft. Next morning the symptoms became much worse, pulse 100, fever high. Outside of local application of weak creoline solution and of potassium iodide salve to the uterus, S. injected for a period of 45 minutes salt solution into the jugular. The pulse that day fell to 80, temperature remained the same, and the patient *voided three or four times clear colored urine.* Next day injections were repeated. During this injection a little air entered the jugular through carelessness of author, increasing pulse rate to 100, causing patient to lie down in pain after a period of ten minutes and breathe more rapidly as well as to break out in profuse perspiration. This unlucky episode, however, was unaccompanied by anything more serious, the disquieting symptoms subsiding again in a few hours. After two days all signs of metritis had vanished. The solution used consisted of a tablespoonful of common salt to a quart of boiled water. Infusion of normal salt solution is indicated in life-threatening hæmorrhages, in septic or uræmic conditions present in infectious diseases and in toxæmias (tetanus, hæmoglobinuria, strychnine poisoning). In poisonings the intravenous injection of salt solution should always precede venesection.—(*Berl. Thierärzt. Woch.*)

CLEFT PALATE IN A STALLION.—A two-year-old stallion after eating always regurgitated some of his fodder through the nostrils. A cleft 9 c. m. in the hard palate showed itself; the lower border of the septum nasi could be felt in the centre of the cleft which was 4 c. m. wide. Mother and father had normal palates.—(*Berl. Thierärzt. Woch.*)

PASSAGE OF A TRACHEOTOMY TUBE INTO THE TRACHEA.—A rectangularly bent tube, that had been temporarily inserted into the trachea of a horse suffering from pharyngo-laryngitis suddenly slipped into the trachea and threatened to suffocate the animal. As the tube was out of the reach of the finger, a second incision was made lower down, and the finger inserted, when it came against the tube, which was forced against the new wound by the effort of coughing induced by the introduction of the finger, but the tube could only be removed by strongly extending the neck backwards for some time. Hot water checked the hæmorrhage.—(*Deutsche Thierärzt. Woch.*)

LIPOMA IN A TERRIER.—W. got an order to poison a terrier. After death he noticed a fluctuating swelling in the abdomen which he nevertheless diagnosticated as a tumor. On autopsy he found a tumor, originating in the mesentery and filling up the greater part of the abdomen. It was surrounded by a very thin capsule which separated the tumor effectually from the surrounding organs. The tumor had a pedicle; the capsule was well supplied with capillaries. Parts of the tumor had undergone mucoid degeneration. The dog weighed 20 lbs.; the lipoma 4¾ lbs.—(*Deutsche Thierzärt. Woch.*)

URÆMIA IN A DOG.—A three-year-old dog urinated with difficulty, collapse was present, surface cold, and the belly prominent from distention of the bladder. It was impossible to introduce a sound into the bladder. An incision into the perineum and the insertion of a strong catheter into the bladder gave vent to issuance of 4 litres of bloody, dark-colored urine. Improvement set in, the coma subsiding as a result of the urinary retention. The author found three calculi, which were removed by another incision. Of the two wounds one healed quickly, the urethral incision, however, remained fistulous and after two months urination was as difficult as ever. A sound could with difficulty be passed through the fistula, but after introduction a fracture of the end of the penis bone could be detected, one portion of which had become detached and needed removal. Beyond this the sound detected in the depth of the urethral fistula a cicatrization of the urethra. The only thing was to incise this with scissors and remove the detached bone. This was done, no more calculi found, and after retraction of the wound a cure resulted. The urine thereafter issued from the fistulous opening behind the os penis.—(*Deutsche Thierzärt. Woch.*)

ENGLISH REVIEW.

INTERESTING FRACTURES.—In the *Veterinary Record* of September, we find accounts of fractures of the ossa suffraginis and of the pelvic bone. In the first the injury to the pastern was such that sixty separate pieces of bone were counted after boiling. This might give the impression that the cause of the injury had been very violent, but such was not the case. The animal was merely exercised; getting frightened, he made a sudden start, and then stopped dead lame. The age of the animal (15 years) and the peculiar formation of the bone may account for the suddenness of the fracture, but not for the large number of fragments of bone. In the second case, Mr. Irving speaks of a well-bred pony which became lame while playing polo, when being turned round at a gallop. At the post-mortem two fractures of the pelvis were found, which were evidently not of the same date, one of them showing evidences of beginning repair, and the surfaces of the bones smooth and bright, with an ivory appearance. In the more recent injury the lesions were fresher, though the bones were somewhat polished, the horse being destroyed only thirty-six hours after the accident. The presence of the first fracture had not been suspected as the animal, though lame, had apparently got over his lameness some short time before, and his trouble had been considered trifling. When he resumed work, the first fracture certainly interfered with his rapid motion, and may have been the indirect cause of the second injury.

TUBERCULOSIS IN PIGS.—In one of the sections of Mr. Cope's report, the *Veterinary Record* informs us that during the year 1896, 13,221 viscera were observed at the post-mortem examinations of swine made that year, and that out of that whole number 159 cases of tuberculosis were found. This, it is claimed, represents a fair proportion of the existence of the disease among swine, *i. e.*, rather over one per cent. A very peculiar observation is also recorded : It is that, though the chief method of transmission from pig to pig is certainly through the common feeding trough, by ingestion, yet the disease was rarely found in any other organ than the lungs and spleen.

TETANUS AND ANTI-TETANIC SERUM.—Notwithstanding all that has been written on that question and the proven evidence shown by French authorities of the comparatively useless treatment of tetanus by antitoxine, the results obtained by English veterinarians seem to be altogether different from those observed on the Continent ; and cases of recovery by the anti-tetanic serum are recorded now and again in our English exchanges. The October issues of the *Veterinary Record* contain several cases where recovery is attributed to that mode of treatment and which was brought on in a comparatively very short time. It must be remembered that while Nocard denies any curative power toanti-tetanic injections, he, however, does not deny the propriety of their uses—they may not be beneficial, but certainly are harmless to the course of the disease, and may be considered, as Nocard says, the best method of treatment to which one can have recourse.

A HAT-PIN IN THE ŒSOPHAGUS.—Mr. A. Brookbanks had this peculiar case in a kitten which he had castrated some three months before, and which was brought back to him with the report that he could not eat. The little fellow was lame on the right fore leg and had on that side of the neck a swelling, which on being opened revealed the presence of a sharp point. This was grasped with forceps and carefully drawn out. It proved to be a lady's hat-pin (six inches long) which had been swallowed and had reached the upper part of the neck and made its way through the œsophagus to the exterior by the expulsive efforts of the kitten.—(*Veterinary Record.*)

LAMENESS DUE TO HYPERTROPHY OF THE LOWER END OF THE SMALL METACARPAL BONES.—This cause of lameness has already been observed on several occasions by Veterinarian J. A. Nunn, and in confirmation of the correctness of his observation, records another case, in which the lameness was relieved by the simple operation of excision of the hypertrophied bone. Mr. F. E. Place, however, records also cases of lameness due to the same cause, but, instead of the surgical interference of osteotomy, has obtained satisfactory results by the application of pyropuncture, blisters and rest. By this treatment he has also obtained a reduction in the size of the hypertrophied bone in one case.—(*Veterinary Record.*)

BIBLIOGRAPHY.

PROCEEDINGS OF THE UNITED STATES VETERINARY MEDICAL ASSOCIATION, Session, 1897. Edited by the Publication Committee, W. L Williams, Chairman, Cornell University, Ithaca, N. Y. Kansas City: Printed for the Association.

We have received from Secretary Stewart a copy of the above work, and a careful perusal of its literary and typographical construction conveys a very gratifying impression of the work of the committee, especially when one is familiar with the obstacles which had to be surmounted and the record-breaking velocity with which it reached the hands of the members. When the Chairman announced in his annual report that he would have the "Proceedings" ready for delivery within forty-five days after the close of the meeting he did not then know that such a task would devolve upon his own unaided shoulders, but when the Convention was in session he found that the Secretary of the association, who is a member of the Publication

Committee, was heels-over-head in the business of the association, and the only other member was upon his back with urgent indisposition. Having given his word that the "Proceedings" would be ready for the printer a few hours after the close of the meeting, he set about the gigantic task single-handed, and, although he had to forego the profit and pleasure of participating in the programme, eschew the social pleasure of the Exposition City, curtail his intercourse with his friends to a nod of the head, and write like a steam engine in his room to the strains of sweet music wafted up from the banquet hall, he stuck to his self-imposed task with a heroism seldom seen in associational work, and being ably seconded later by the indefatigable Secretary and prompt printers, he has been enabled to fulfil his promise to the letter. Even with such dispatch, and with a direct saving to the association of thirty cents on each page of the book, it is not a "rush job," but is in every way as handsome and complete as any of its predecessors. The price has been brought down this year to $1.03 per page, against $1.33 last year, and $1.60 and upwards in previous years. It was ready for delivery in forty-five days after the meeting, against one hundred and twenty days last year, and from six to eighteen months in previous years.

It contains a list of the officers for 1896–97, the committees, resident State secretaries, officers and committees for 1897–98, a list of the regular members (numbering 312), those elected at Nashville (24), honorary members (24), the welcoming addresses and the response, the President's address, members and visitors present, reports of the various sessions of the Executive Committee, Finance Committee, Secretary, Publication Committee, Intelligence and Education, Diseases, Army Legislation, the various State Secretaries, and the Proceedings in detail of each day's session, with the papers and discussions in full. Aside from this, there is incorporated in this year's volume the deliberations of the Association of Veterinary Faculties of North America, and the proceedings of the first annual meeting of the United States Experiment Station Veterinary Association, with the papers presented at each. The whole is completed with a very comprehensive and well-arranged "Index," enabling the reader to find at a glance any topic he may be interested in.

The association may well be congratulated on the energy, economy, and completeness of the work performed by its Publication Committee of 1897, and the chairman of that committee is entitled to much consideration for his devotion to its interest in the work which he accomplished against such odds. For the session of 1898 the committee has been increased to five by the addition of Profs. Niles and Bell, and it is expected that by this distribution of labor the burden may be lightened and the work expedited.

SUPPLEMENT AU NOUVEAU DICTIONNAIRE PRATIQUE DE MÉDECINE, CHIRURGIE ET HYGIENE VETERINAIRE (Supplement to the New Practical Dictionary of Veterinary Medicine, Surgery and Hygiene,) By Profs. A. Sanson and L. Trasbot. Asselin & Houzeau, Paris.

The first volume of the dictionary, generally called "the Bouley Dictionary," was published in 1862, and the work was not entirely completed until two or three years ago. During these thirty odd years veterinary medicine has made immense progress, and, to make that great encyclopedia as valuable as it was intended by the first authors, the necessity of a supplementary part imposed itself. In fact, it was already in project at the time of the issue of the first part of the book.

Profs. A. Sanson and L. Trasbot have undertaken the work, and this first volume shows that when it is completed the supplement will be well worthy of the original work.

The names of the collaborators, Profs. Cadiot, Kaufman, Lucet, Neumann, Peuch, Sanson, and Trasbot, are by themselves sufficient authorities to prove how valuable the contents of this part of the supplement are.

Covering material included between the letters A and D, most interesting articles are treated and brought up to date with the progress made in science, and among them are those of antisepsy and asepsy and of criptorchidy, by Cadiot; the diphtheria of fowls, by Lucet; actinomycosis, botriomycosis, cachexia, diastomatosis, by Neumann; anthrax, by Peuch; carcinoma, by Trasbot. The largest part of the book is also filled by numerous articles from the pen of Professor Sanson on various subjects related to zoötechny and treating principally of many of the various breeds of horses, cattle, sheep and swine of France and Europe.

There is no doubt that this supplement will prove a most important addition to the dictionary of Bouley; but it must be hoped that its completion will not demand as long time as the original work did.

A TEXT-BOOK OF HORSE-SHOEING. By A. Lungwitz. Translated from the German Edition by Prof. J. W. Adams. Published by J. B. Lippincott Co., Philadelphia.

A work that has already reached its eighth edition needs scarcely a review or a notice as to its value, but what with us is worthy of appreciation is its introduction in American veterinary literature by an American veterinarian, who, though yet young, has already made his mark in the performance of the duties of his profession. The work is divided into three parts. In the first the anatomy of the foot is considered, with its relations to the entire limb. In the second the shoeing of healthy hoofs, with some of the peculiarities of action and their winter shoeing. In the third the shoeing of defective hoofs, some of the diseases and injuries of the hoof, and the effects of shoeing. This chapter concludes with a few remarks on the shoeing of mules, asses and oxen. One hundred and forty-one plates illustrate the text.

At this time, when the art of horse-shoeing is receiving such attention, when schools of farriery are being established all over the country, the translation of Professor Adams comes just at the right point. The author deserves the thanks of the profession for his efforts, and our sincere wishes for the success of his work.

EXERCISES IN EQUINE SURGERY. By Professor P. J. Cadiot (Alfort), translated by Prof. A. W. Bitting, and edited by A. Liautard, M.D., V.M. With 56 Illustrations. W. R. Jenkins, New York City.

Another triumph for French veterinary surgery is the publication and the success obtained among English readers of the translation of Dr. Bitting of the "Exercises of Equine Surgery" of Cadiot (Alfort). Students of American schools, those of Canada, those of England, and surely also all the veterinarians who practice principally surgery, will find in it information and suggestions of great importance, which, if ignored, might give rise to great disappointments and fatal terminations where confident results were expected from operations.

DISEASES OF SWINE. Written as a Text-Book for the Veterinary Surgeon, Student, and Swine Grower. By D. McIntosh, V.S., Professor of Veterinary Science in the University of Illinois, author of "Diseases of Horses and Cattle."

The above entitled work has been received from the author, and proves to be a neatly printed and bound volume of 230 pages, illustrated by a number of wood-cuts, and divided into twenty-four chapters. The author in his preface speaks of the absolute absence of literature upon the general diseases of the pig, and his aim has been to supply this want. He says, "the subjects dealt with are based on science and confirmed by experience, so that the reader will not lose time in reading theories which are not confirmed by facts."

CORRESPONDENCE.

AS TO THE FREE BIOLOGICAL PRODUCTS SUPPLIED BY THE GOVERNMENT.

CHICAGO, ILL., Nov. 4, 1897.

Editors American Veterinary Review :

DEAR SIRS :—I beg the courtesy of your pages to say that one of the difficulties we have to contend with is that not only the Federal Government, but also some State, county and city authorities are manufacturing and supplying, *gratis* or otherwise, tuberculin and other biological products. Though this may be constitutional to a certain extent, yet the practice is undoubtedly greatly abused ; it considerably interferes, not only with commercial enterprise, but with private rights. Why should one veterinarian obtain, for instance, his tuberculin *gratis*, while another has to pay for it? I believe that the original idea of the Government in supplying tuberculin was to thoroughly test it as a diagnostic agent. But as this question has long since been settled in favor of the preparation, I see no reason why the Government should continue in this extraordinary course. The same remarks apply to black leg vaccine. This preparation has for more than ten years past been recognized as a practically absolute preventive of the disease in question, and it has during that time been well known as a commercial product prepared by the most experienced men in the world and placed on the European and American markets by responsible firms. The Government is now to some extent supplying black leg vaccine for so-called experimental purposes when these experiments were made long ago and the vaccine is already well known in this country. I know of no reason why the Government should supply biological products more than horses or houses, and shall shortly have something further to say on this subject, but I think it is one that should be taken up by the press. I hold myself at your disposal for any further information that you may desire. Yours truly, HAROLD SORBY,

Manager Pasteur Vaccine Co., Limited.

CLASS OFFICERS OF THE A. V. C.—At the organization meeting of the class of '98 of the American Veterinary College, held in the lecture room on October 21st, the following gentlemen were elected officers : President, Mr. Weisbrod ; Vice-President, Mr. Atchison ; Secretary, Mr. Braisted ; Treasurer, Mr. Morris ; Historian, Mr. Walker.

OBITUARY.

FINLAY DUN, M. R. C. V. S.—This widely-known veterinarian died recently at his home, Gorgie House, Edinburgh, Scotland, aged 67 years, from the effects of a stroke of apoplexy received last February. He was chiefly known to the veterinary profession of America as the author of the text-book on materia medica, "Veterinary Medicines: Their Actions and Uses," first published in 1854 and passed through eight editions, he being recently engaged in preparing a ninth. It has been for many years the text-book of both the English and American schools. He at one time visited America as special commissioner of the London *Times* and wrote a series of articles entitled "Food and Farming," which were afterwards produced in book form. He was a Fellow of the Royal College of Veterinary Surgeons, and was for years an examiner for the diploma of the Highland and Agricultural Society and of the Royal College of Veterinary Surgeons, as well as for the fellowship of the last-named institution.

SOCIETY MEETINGS.

PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.

The semi-annual session was convened in Franklin, Venango County, on Tuesday, September 21. The commodious and attractive apartments situated over 1249–1251 Liberty Street, and known as the A. O. U. W. Hall, had been selected by the local reception committee. Here was held one of the most interesting and successful meetings experienced by the association in the history of its autumnal sessions. An incident occurred in the early morning that proved a delightful experience to the attending members. The association received an invitation to visit the Prospect Hill stock farm of Messrs. Miller and Sibley. Mr. E. H. Sibley gave inspiration to his invitation by sending two elegant four-in-hands to carry the guests from the Exchange Hotel to the farm. To those who were strangers in this unique and prosperous niche in the great oil-regions, a tally-ho drive through a section whose hillsides are dotted with scores of derricks over oil-wells was a novel experience. The enjoyment to all was as keen as the morning was beautiful, and the scenery picturesque and inspiring. The inspection of the trotting-stock and stud, also the magnificent herd of high-class Jersey cattle, greatly interested the veterinarians, who are lovers of quality in stock, and who appreciate the beauty and value of hygienic surroundings. Much praise and satisfaction were expressed with what was seen, and many thanks were tendered Mr. Sibley for his attentive courtesy.

Returning from the farms, the association was called to order at 11.30 A. M., by the President, James B. Rayner. On motion the roll-call was dispensed with, and the Recording Secretary at once proceeded to read the minutes of the previous meeting, which were approved as corrected.

The President then delivered his address. He thanked the association for the honor conferred by electing him as its presiding officer for the ensuing year. He spoke with enthusiasm upon the value to the profession of veterinary associations. He showed them to be powerful educators, and the means of stimulating the best elements in, and elevating the character of the profession. He spoke of the value of fraternal relationship; the additional strength given the State and national associations by the local ones. He said that a closer affiliation of associations is necessary to give the best support to the important questions upon which we deliberate and aim to influence legislation. Advancement is the result of personal interest, no less in the history of veterinary professional work than along other lines, and that if each member would contribute papers, reports and personally work for the interest of the association, the latter is sure to be successful. The President pointed with pride to the position of the veterinary student of to-day, contrasted with said position thirty years ago. He had witnessed with delight the astonishing progress in the growth of the profession, and in the opportunities afforded by colleges for securing a veterinary education. He said, "you are so much better prepared, so much better provided for than we who have preceded you, that we can pass from the duties that have been ours with strong faith that you will carry on the good work. As one with long experience I can say that though the duties are hard at times, they are pleasant. They are worthy of your best efforts. With an honest purpose to do right and earnest labor for those who place their confidence in you, you will be successful and will shed honor on your chosen profession."

At the close of his address, the President introduced the Mayor of Franklin, George B. Jobson, V. S., who in a happy strain spoke cordial words of welcome. The Mayor dwelt upon the progress and status of our profession; of its age in the world; its prestige; the immense value the study of comparative medicine had been to the progress of human medicine on essential problems; its conspicuous place as the guardian of the health of the people in being able to provide a healthful meat and milk supply as well as to protect the community from the ravages of certain contagious diseases. He complimented the association on its good work; on the creation of the State Veterinary Examiners Board to influence higher education and take the profession out of the hands of empirics; on the State Live Stock Sanitary Board to promote the health of the people of this great commonwealth and to conserve the moneyed interest in live stock in our State. The Mayor made each member feel that he was at home in Franklin by his hearty greeting.

Following the Mayor's address, Dr. W. Horace Hoskins made fitting remarks upon the character and usefulness of our late member, Dr. John R. Hart, and recommended that a committee be appointed to draft resolutions of respect and condolence. The Chairman then appointed Drs. Hoskins, Pearson, and T. B. Rayner to constitute said committee.

Election of officers being next in order, Dr. Hoskins presented the name of Dr. Francis Bridge for treasurer to fill the vacancy caused by the death of Dr. Hart. On motion Dr. Bridge was unanimously elected.

The following names were proposed for membership: Henry Bowers, V. M. D., Philadelphia; Samuel J. Swift, D. V. S., Franklin, Pa.; W. E. McCray, V. S., Oil City; Harry Emery, D. V. S., Pittsburg; David Waugh, D. V. S., Pittsburg; E. C. Porter, V. S., Newcastle; E. E. Bittles, V. S., Newcastle.

To fill vacancies on the Board of Trustees, the Chairman appointed Drs. Hoffman, Michener, Rectenwald, and James A. Waugh. Following a short intermisssion the chairman of said board reported favorably upon all the applications for membership. The Board in its report considered the relation to this association of members who move to other States to practice their profession. While the Board holds that such members may retain their membership if they so desire, it urgently recommends them to ally themselves with the interests of the association of the State in which they practice. The above recommendation was adopted.

The following resolutions were adopted by the association:

WHEREAS, Of the last three meetings of the U. S. V. M. A., two have been held in the West, *i.e.*, in Des Moines and Nashville, and the third at Buffalo, three hundred and fifty miles from the seaboard; and

WHEREAS, The veterinary profession in the east has been somewhat neglected and has suffered from such oversight, and needs the stimulation and cohesive influence of a meeting of the National Association ; be it

Resolved, That the Pennsylvania State Veterinary Medical Association earnestly petitions the President and officers and other members of the Executive Committee of the U. S. V. M. A. to favor the holding of the next meeting at Boston, and express the belief that it would be a serious error to hold three of four meetings a long distance from the centre of membership of the Association, and especially to select a meeting-place in a territory that has been occupied within three years.

Following the discussion and adoption of this report, the Board of Trustees having nothing further, on motion the association instructed the Secretary to cast a ballot for the new members, who were then introduced by Dr. Jobson.

Corresponding Secretary's Report.—In his written report, after showing his expense account, the Secretary dwelt upon his correspondence not only with each member of the association, but with every honorable veterinarian in this State and the adjoining counties in New York and Ohio. The number of replies and inquiries from them serves to indicate the interest awakened by association work among new members, and its wholesome influence upon the great body of professional men in veterinary medicine. A number of complaints of illegal practice carried on in numerous ways and various ruses have been reported. These have been turned over to the State Board of Examiners, under whose jurisdiction such matters come.

On motion made by Dr. Rhoads and carried, a committee of two was appointed to examine and assist in settling the association accounts of the late Treasurer before said accounts pass into the hands of the newly-elected officer. The President appointed Drs. Hoskins and Pearson to constitute said committee.

Under the head of new business, Dr. Noack asked why the State Association of Pennsylvania and the National Association convened in the same month. He pointed out the inconvenience, the impossibility in some cases of attending both meetings, and suggested that a difference of several months be made between them. This opened a lively discussion. It was shown that the time of the semi-annual meeting of the State Association had been changed from the Tuesday after the first Monday in September to the third Tuesday in the month, to overcome this embarrassment. That the date of the National Association was one most favorable to its members, many of whom could not otherwise attend. That September was a favorable and pleasant month to hold conventions. That we have no jurisdiction over the National Association, and that an idea contemplating the radical change of the time of the meetings of this association would be more practical before the annual spring session at Philadelphia.

Report of the Committee on Legislation.—Dr. Leonard Pearson, as chairman of the Committee on Legislation, in a verbal report, in effect, said: One difficulty encountered by the State Live Stock Sanitary Board in its efforts to deal with the suppression and prevention of tuberculosis, in the past year, was how to prevent the disease from being reintroduced on premises by cattle brought from other States or counties for dairy or breeding purposes. In other words, how were we to protect our cattle interest against a supply being brought from an infected source. It had been suggested that legislation be secured to control the admission of cattle into the State, admitting only such as could be shown to be free from tuberculosis. Such a law had since been enacted. It provides that cattle coming into the State, to be used for dairy and breeding purposes, must undergo the tuberculin test before admission. The test may be made at the most convenient stockyards on the line of railroad over which the cattle are shipped, or in quarantine. The law takes effect January 1, 1898. Said law is enforced by the Live Stock Sanitary Board, and a fine of fifty dollars is imposed for its infringement. In flagrant cases of its violation the punishment may extend to imprisonment. But the details of the method of enforcing the law and of inspection and reporting violation, etc., had not been fully developed, but would be brought to completion in the near future.

Dr. Pearson declared that this law was a necessity. It was not a new idea, for other States had adopted similar measures, and required the tuberculin test. Of the New England States this is especially true; and Pennsylvania would not be made a dumping ground for diseased animals that could not be disposed of in other commonwealths.

Another measure has been passed appropriating $15,000 to be expended in the investigation of infectious and contagious diseases. The value of the live stock interest of Pennsylvania aggregates approximately $125,000,000. The loss sustained through contagious diseases is enormous, and is expressed in millions. The object of this measure is to lessen these great losses by prevention of the plagues that produce them. But the particular purpose is to prevent tuberculosis. It would seem a prodigious task to apply the tuberculin test to all the cattle in this State. It would be impossible from the standpoint of cost. To prevent the malady would appear to be the most practical method. But how? No doubt but that in more perfect knowledge will be found the means we desire. We propose to study these great problems experimentally, and to determine under what causes and conditions infectious and contagious diseases are spread. Thus we hope to arrive at more positive knowledge, more definite conclusions than we now possess. We will study the progress of tuberculosis under both sanitary and unsanitary conditions. The elements of light, darkness, moisture, and temperature will be observed in their effects upon animals in health and disease and their relation to the propagation and spread of the same. With proper facilities we may study the disease under a variety of conditions at one and the same time. The amount set apart for such study is scarcely adequate, but it marks a beginning. This movement we now make is an innovation. In Nebraska there is a similar one, but this is among the first of its kind in this country. Views concerning the phenomena of causes, progress, and spread of contagious and infectious diseases are numerous. But they all lack accurate, scientific proof; hence the necessity of such data. Other diseases may be studied at the same time: osteo-porosis, about which there are so many theories yet little positive knowledge; also the so-called cerebro-spinal meningitis, contagious abortion, anthrax, and hog-cholera. It is largely due to your influence, to the influence of this association, that the step is taken. It is not more than fair that you should have a voice in this matter, and suggest the means that may solve this problem before us. I invite discussion, and hope you will be free to make suggestions and thus help forward the work you have begun.

At this time a motion to adjourn was made and carried. A bounteous repast had been prepared in the room adjoining the hall. The veterinarian does not take a back seat if judged by the old saying,—"a man who cannot eat, cannot work."

The afternoon session was called to order at 2:20 P. M. The roll-call found the following members present: Drs. Hoskins, Hoffman, Helmer, Irons, Geo. B. Jobson, Geo. Jobson, McNeil, Michener, Noack, Pearson, Thomas B. Rayner, James B. Rayner, Rectenwald, Rhoads, Waugh and McLean. New members present were Drs. Bittles, Chrisman, Emery, McCray, Swift and Wier. The visitors were W. A. Meredith, D. V. S., and James McMahan. Letters from several absent members were read.

Reports of County Secretaries.—Reports were read by Dr. Geo. Jobson for Venango County; Dr. N. E. Reinhart, Montgomery County.

Report of the Committee on Sanitary Science and Police.—Dr. J. Curtis Michener (chairman) made the following report: There are several plans of control work concerning tuberculosis that have been tried in several States.

1st. Inspection of all cattle in the State—as in Massachusetts. This is being abandoned on account of its unpopularity with the farmers and dairymen.

2d. Inspection here and there as the disease is reported to exist. This is without method, and of very limited good.

3d. Under direction of State Boards of Health, as in New York State. It is a health measure concerning people and unpopular with farmers.

4th. Under direction of State Live Stock Sanitary Boards, as in Pennsylvania.

The State Live Stock Sanitary Board of Pennsylvania consists of four members—Governor, Secretary of Agriculture, Dairy and Food Commissioner, and State Veterinarian—all State employees receive no pay for serving on the Sanitary Board. The method of work is as follows:

1st. Application for inspection—which is a contract, binding the cattle-owner to coöperate in getting rid of the disease and the disinfection of premises.

2d. Inspection done at expense of the State.

3d. Cattle appraised and killed.

4th. Premises disinfected.

All those whose property is becoming consumed by tuberculosis can avail themselves of these provisions, and get rid of the disease, and receive fair remuneration for cattle found diseased and destroyed. Therefore, the work receives the active coöperation of the farmers, and results in much permanent good to the State. Disease is being suppressed: in some places rapidly—in others slowly, and without interference with the live stock and dairy interests. Increased confidence is given to consumers of dairy-products as well as meats. The public is being educated in the means to be used to prevent the spread of the disease.

Up to the end of last fiscal year, June 1, 1897, expenditures for cattle amounted to $43,476.50. Amount paid for inspections $8291.99. Inspections cost less than 17 per cent. Cattle-owners receive 83 cents on every dollar expended for tests and for cattle killed. More than 10,000 head have been tested with tuberculin. Less than 20 per cent. of these found tuberculous. These are herds that were thought infected before tested. Many breeding-herds have been put on a sanitary basis.

Everything seems to be working satisfactorily and there seems to be no reason for a change of method. The work is enforced with judgment and conservatism, and promises to free the herds from this destructive disease without creating alarm. Portions of the State that, less than one year ago, were in bitter hostility, and petitioned the Sanitary Board to stop what they called the wholesale slaughter of herds on the strength of the tuberculin test, are now perfectly reconciled, and are coöperating with the authorities in a good and sure work.

Regard for propriety would require that our report end here, as our knowledge of the occurrences and discoveries in the field of sanitary science and police since our last meeting is limited to these facts for which we are indebted to our State Veterinarian. But, with your indulgence, we will give ourselves free scope and glance over the past, present and prospective future. In looking back to student-days of thirty-three years ago, it seems almost incredible that there should be such a wide difference in the actual and sanitary knowledge of the medical world, especially in the veterinary practice of this country. True, in those days, Massachusetts had already adopted measures for stamping out contagious pleuro-pneumonia among cattle, and was followed up by other States, and finally brought to a successful termination by the coöperation of our National Government. Glanders was combatted and somewhat restrained by a common instinct for the public safety, by common law and the aid of a few qualified practitioners. The germ-theory of disease was being accepted by the medical mind, but it has been within a few years that the successful laboratory work has been done, and the course determined, by which we shall conquer disease and stay pestilence. The progress made in twenty-five years is indeed most gratifying and encouraging. It is our privilege, at this time, to point out ways in which we, as practitioners, may aid the good work. Our State, with many others, and the National Government are now in position to guard our immense live-stock interests, and promote sanitary science.

Among the chief aids required at this time are more money at the disposal of our Bureau of Animal Industry; the State Live Stock Sanitary Boards, and Boards of Health. We trust that returning prosperity, a better public conception of the needs and a better realization of the truthfulness of the old saying "an ounce of prevention is better than a pound of cure," will meet this paramount requirement when the funds are wisely and economically explained. The next important need is more interest and better coöperation on the part of practitioners. They form the chief and most reliable source of information to the State Veterinarian and Live Stock Sanitary Board, and are its trusted agents in carrying on the work. We should be well informed. I find it to be an actual fact that we have practitioners who do not know of our State provisions for suppressing outbreaks of contagious diseases, and the investigation of causes. We should be in close touch and sympathy with the authorities in their efforts to protect the stockman's interests, and the public safety. Our veterinary colleges are furnishing a constantly increasing need in the form of qualified veterinarians to act upon Boards of Health, and as inspectors of live stock and their products, and as public educators and authorities upon which the people can rely. A great work is yet before us, until we have the State Live Stock Sanitary Board so well aided throughout the entire State as to enable it to completely fulfil its mission. In our opinion it could profitably take cognizance of the most common contagious and infectious diseases, such as strangles and influenza in horses.

These diseases inflict an unnecessary amount of loss and inconvenience due to the ignorant and careless manner in which diseased horses are allowed to mingle with sound ones, and the neglect of disinfection. These diseases are frequent and widely distributed in our part of the country. For instance, a drove of horses are shipped from one distant point to be sold at public sale. The cars they are brought upon, and the yards and stables they pass through are ofttimes hot-beds of infection and when sold they are ready to develop the disease. They are spread broadcast and each stable in which they go becomes another centre of infection. It need not, nor should not be, if proper supervision and restrictions were placed upon the horse market. The world is starting upon an era of warfare upon disease germs in animal and vegetable life, and upon injurious insects and noxious weeds, that will some day make this a better sphere to live upon. In this grand battle the veterinarian will stand among the foremost.

The literary programme was now opened with a talk by Dr. Geo. B. Jobson on "Bacteria." Dr. J. B. Irons presented the subject of "Anthrax." Dr. Willis B. McCray, "Parturient Apoplexy." Dr. W. Horace Hoskins, "Why We Come to Franklin." Dr. C. C. McLean, "Dairy and Milk Inspection." Dr. Otto G. Noack, "Report of Surgical Cases, as Tenotomy, and Resection of Necrotic Parts of Soft Tissue of Frog caused by Nail Wounds." Dr. E. Mayhew Michener, "Record of a Few Cases of Abdominal Surgery."

Reports of Cases.—Dr. J. C. Michener read a report entitled "Four Interesting Cases at Cloverdale Farm." Dr. McLean reported a rare case. He was called to attend a collie bitch that gave birth to nineteen puppies. The family seemed healthy. Dr. Rectenwald and others reported cases.

The following resolution was presented and unanimously adopted:

> WHEREAS, This meeting of the State Veterinary Medical Association has been one of the most enjoyable and successful that has been held by this organization, and
>
> WHEREAS, This gratifying condition is due to the energy and courtesy of our fellow-member, the Mayor of Franklin, and his associates on the Committee of Arrangement, to the entertainment and instruction afforded by Messrs. Miller and Sibley, to the efforts of those who prepared papers for this occasion, and to the local and county press, be it
>
> *Resolved*, That the thanks of this Association are hereby extended to all of those who have contributed so materially to the success of this meeting, and we hereby express our deep appreciation of the same.

This resolution was also offered:

> WHEREAS, We have learned through the State Veterinarian of certain contemplated plans for the better solution of many of the very important problems yet to be solved in relation to the propagation, means of extension, and methods of control of certain infections and contagious diseases of live stock, especially tuberculosis; and
>
> WHEREAS, These are of the greatest importance to the welfare and health of the public, and to the vested interests of a large portion of our people; therefore be it
>
> *Resolved*, That we most heartily endorse these proposed plans of investigation, and earnestly recommend their early application, that the results to be obtained may be promptly realized.
>
> (Signed) W. HORACE HOSKINS.
> J. CURTIS MICHENER.

Following these resolutions, Dr. Hoskins read the "By-Laws," as revised. The articles were read and voted upon separately, and then the whole was adopted as revised.

By consent of the association, a paper was read by Dr. W. A. Meredith, of Corry, Pa., on "Cerebro-Spinal Meningitis." Owing to the lateness of the hour (7 P. M.) this paper was not discussed, but a motion to adjourn was made and carried.

Most of the members were obliged to remain in Franklin over night and take early morning trains to their respective homes. Each took with him pleasant memories of Franklin, of fraternal greetings and pleasure in another experience of the days of "Auld Lang Syne."

JACOB HELMER, D. V. S., *Recording Secretary.*

CALIFORNIA STATE VETERINARY MEDICAL ASSOCIATION.

The third quarterly meeting of this association for the year of 1897 was held in the rooms of the Baldwin Hotel, San

Francisco, Cal., September 8, at 8.30 P. M., and was called to order by the President, Dr. R. A. Archibald. The roll was called and a fair attendance was present. The minutes of the previous meeting were read and approved.

Dr. Fox moved that a committee be appointed to draft resolutions of respect in memory of our late member, Dr. P. P. Parrent. The motion was carried, and Dr. Fox was appointed as said committee.

Under the head of reports of committees, Dr. Jackson, as a committee of one, appointed to wait upon the San Francisco members and ask them to donate something toward defraying the expenses incurred during the last session of the Legislature, made his report. The report showed that no money had been collected since the last report. The report was accepted and the committee discharged.

Dr. H. F. Spencer, chairman of the committee appointed to draft a resolution protesting against the action of the Governor of Illinois in appointing a non-graduate to the office of State Veterinarian of that State, submitted the following:

WHEREAS, It has come to the notice of the California State Veterinary Medical Association, that Governor Tanner, Governor of the State of Illinois, has appointed a non-graduate to the office of State Veterinarian of that State, and

WHEREAS, It is universally admitted that Dr. Trumbower, the recent State Veterinarian of that State, was a well qualified, painstaking and efficient officer, and

WHEREAS, The action of Governor Tanner, in the appointment of a non-graduate to so important an office establishes a pernicious example, as is evidenced by the action of the authorities of the city of Chicago in the appointment of a non-graduate to the position of Veterinarian for the Fire Department of that city; therefore, be it

Resolved, That the California State Veterinary Medical Association do protest against the said appointment of a non-graduate as State Veterinarian of the State of Illinois, and be it further

Resolved, That the action of Dr. Joseph Hughes and Dr. J. F. Ryan, of Chicago, in resigning their positions as Assistant State Veterinarians of that State, be heartily commended by this association; and be it further

Resolved, That copies of these resolutions be forwarded to Governor Tanner, the different veterinary journals, and that they be spread upon the minutes of this association.

(Signed) H. FRANCIS SPENCER,
R. A. ARCHIBALD,
D. F. FOX, *Committee.*

San Francisco, June 9th, 1897.

The resolution was unanimously adopted.

Dr. D. F. Fox. introduced the following resolution:

WHEREAS, It has pleased Almighty God in His wise dispensation to remove from among us our late member, Dr. P. P. Parrent, be it

Resolved, That while we bow humbly to His will, we, nevertheless, feel keenly the loss we are called upon to sustain, for in our late member we had one who was devoted to his profession and to the association, and a man that was honored and respected by the members of this association and the entire community in which he lived; and be it further

Resolved, That a copy of these resolutions be spread upon the minutes of this association and a copy be sent to the wife of the deceased.

The resolution was adopted.

A communication was read from a Mr. Thomas, of San José, asking information as to the professional qualifications of Dr. F. Forrest, of San José, and whether or not he was capable of teaching his son the science of veterinary surgery intelligently. The communication was placed on file, as Mr. Thomas had already been notified that it would be wise for him to send his son to a veterinary college.

The name of Dr. P. C. Davenport was dropped from the roll of membership.

Under the head of new business, Dr. R. A. Archibald introduced the subject matter of the appointment of a committee on diseases, and spoke at some length as to the advisability of appointing such committee, the responsibility of the committee, and the work it would entail upon them. Dr. Pierce also spoke on the subject, he agreeing with Dr. Archibald that it would be placing a great amount of work upon a few, but at the same time he realized the benefits to be derived from such a committee. After considerable discussion by the other members present, further action was deferred until the next meeting.

Nomination of officers for the ensuing year was next in order, and resulted as follows: For President, Dr. R. A. Archibald, of Oakland; Vice-President, Dr. G. F. Faulkner, of Salinas; Secretary, Dr. D. F. Fox, of Sacramento; Treasurer, Dr. C. L. Megowan, of Sacramento. Board of Examiners, no nominations. All nominations were left open until the annual meeting.

Reading of papers was postponed until the annual meeting.

Several subjects were introduced for discussion, which proved to be very interesting.

Essayists for the next meeting were appointed as follows: Dr. F. E. Pierce, of Oakland; Dr. G. F. Faulkner, of Salinas; Dr. H. A. Spencer, of San José, and Dr. C. B. Orvis, of Milton.

There being no further business before the meeting, it adjourned to meet in San Francisco, Wednesday, December 8th, 1897.

D. F. Fox, *Secretary*.

MONTREAL VETERINARY MEDICAL ASSOCIATION.

The regular meeting of the society was held on Thursday evening, October 20, in the Library, the First Vice-President, Prof. Baker, occupying the chair. There were present also Dr. Duncan McEachran, Dr. Sugden, and a full attendance of members.

After roll-call and the reading of minutes, it was unanimously voted that the Secretary should order Georg Müller's "Diseases of the Dog" and P. J. Cadiot's "Treatise on Veterinary Surgical Therapeutics of the Domestic Animals," as additions to the library of the society.

The President then called on Mr. Lambert for his case report, which proved to be one of "Impaction of the Colon in a Mule," rendered interesting from the facts that he had obtained no results from the use of such powerful drugs as croton oil and eserine, and that the post-mortem showed the colon to be decidedly subnormal in size. Mr. Lambert explained his reasons for resorting to the above treatment by stating that, as is so often the case, he had not been called in professionally until the owner had already reduced the patient to a hopeless condition by the ridiculous use of numerous quack remedies. A discussion ensued, assisted by the Hon. President and President, as to the causes, symptoms and treatment of impaction, and as a result the prevailing opinion was that the easiest course to pursue was one of patience and perseverance in diluting the intestinal contents with a plentiful supply of mucilaginous drenches and rectal enemas in preference to the use of dangerous drugs which were only occasionally successful.

Mr. Spanton then followed with an interesting essay on the subject of "Purpura Hæmorrhagica," in which he showed how, from the earliest times of veterinary writings, the irregularity of the symptoms, ætiological obscurity and different degrees of severity of this disease had caused a varied nomenclature, stating that the one positive symptom in mild cases, otherwise difficult of diagnosis, was the appearance of purple spots on the Schneiderian membrane. After carefully describing the symptoms, he stated that the idiopathic swellings were due to the congested condition of the arterioles and capillaries, owing to vaso-motor paralysis, pointing at the danger of asphyxia should the extravasation of blood occur in the lungs. Among the many conditions which are supposed to be the causes of this disease, he gave special importance to that of improper hygienic surroundings, quoting Prof. Williams as his authority for saying that "Purpura was due to the absorption of products of decomposition extrinsic to the body and that animals not fully recovered from some former debilitating disease were predisposed to it." He mentioned the difficulty in forming a prognosis, as frequently a patient, to all appearances making a satisfactory and rapid recovery, might at the next visit be found at death's door. The post-mortem symptoms were then fully described, and in conclusion he mentioned the various modes of treatment, recommending as preventive measures a stimulating course for patients suffering from diseases of the respiratory organs, such as influenza, accompanied as they were by a low type of fever. A long discussion ensued, in which the advisability of scarifying or fomenting the swelling was argued, it being generally concluded that the former was unwise, whereas the latter had frequently, according to the experience of some, been a great benefit. Dr. Duncan McEachran then pointed out what a large field this disease presented for elucidation. In his opinion the thickening of the bronchial mucous membrane was caused by an attack of influenza preventing the air from properly reaching the blood, and as a consequence of this impoverished condition of the blood a relaxed condition of the walls and the smaller vessels was produced, permitting the transudation of the fluid into the cellular tissues at the most dependent parts of the body. He considered scarifying injudicious, inasmuch as the natural healing power was already very weak and there was a great tendency for it to go on to gangrene; therefore, every caution should be taken to prevent an abrasion. He fully endorsed the recognized treatment of chloride of potash or turpentine, advising also the persistent use of hot fomentations. The Chairman stated there was no disease like it in peculiarity, mentioning the shifting and sudden extent of the swelling and the apparently normal condition of the patient otherwise as indicated by the pulse, temperature and eyes. This disease, he said, should stimulate pathologists, and, as regards the treatment with an intratrachial injection of a solution of iodine, of which he had only one unsuccessful experiment, he recommended this to the consideration of the experimental committee. He then held over the discussion on this subject, and, there being no further business, adjourned the meeting.

W. B. WALLIS, *Secretary-Treasurer.*

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The October meeting of the Keystone Veterinary Medical Association was called to order by Dr. Thos. B. Rayner, who took the chair upon motion of Dr. Hoskins, in the absence of President Jas. B. Rayner.

The following members of the profession were present: Drs. F. S. Allen, Chas. M. Cullen, Chas. T. Goentner, Walter L. Hart, W. H. Hoskins, W. S. Kooker, Chas. Lintz, Leonard

Pearson, W. L. Rhoads, Thos. B. Rayner, H. A. Christmann, Wm. Ridge, C. J. Marshall, John W. Adams, J. C. Michener, Robt. Gladfelter, J. C. Foelker, S. J. J. Harger. J. Beatty, J. C. Ranck, of Biological Department University of Pennsylvania; also Messrs. P. K. Jones, J. E. Spindler, A. E. Cunningham, S. L. Blunt, L. D. Horner, C. Migray, J. J. Repp, H. Hoopes, and others whose names we did not get.

Dr. J. C. Michener, of Colmar, read a paper on "The Value of Exercise," which was one of the most forceful papers written upon independent free lines of thought and experience that it has been the pleasure of the association to hear for a long time. He said exercise out in the open air and sunlight was a most essential requisite to health; thus we procure keenest appetites and enjoyment, accelerate and deepen circulation and respiration, tone and strengthen every organ; thus we promote secretions, excretions and exhalations; when neglected stagnation and impurity begin, and habitual disease is invited and life shortened. He then told of the value of exercise in strangles, grease heel, influenza, dumb-staggers, laminitis in its early stages, congestive pneumonia, azoturia, etc. He then went into detail to tell why and in just what way the exercise was helpful in each case, and how they were put upon their feet when found down. He dwelt especially upon the value of good sanitation, plenty of air and sunlight. When his paper came for discussion he was vigorously questioned from every side, yet he was always ready with a practical answer; many times where one would think movement impossible, he has proven it not only possible but essential to a rapid recovery. He concluded by saying we must not expect an animal to have perfect health or be restored when sick if confined in a dark place without exercise. To say the discussion was interesting would be putting it very mild indeed, and many goods points were brought out.

This discussion was closed that Dr. Ridge might read his paper on "Acute Indigestion in the Cow." This paper also showed much thought and thorough work on the part of the author; and the discussion was also interesting, but was necessarily brief, as the election of officers for the ensuing year was now taken up, with the following results:

President, Leonard Pearson; Vice-President, H. P. Eves; Treasurer, F. Bridge; Secretary, W. L. Rhoads. Censors—Wm. Ridge, W. H. Hoskins, W. S. Kooker, T. B. Rayner, and Chas. Lintz.

President-elect Pearson was now called to the chair, the duties of which he accepted in a short but expressive and appropriate speech.

Dr. Hoskins now spoke of the present meat inspection of Philadelphia, and of possible means of improvement. He then made a motion that the President appoint a committee of three to confer with the Woman's Health Protective Association and other kindred organizations in an endeavor to bring about a more thorough inspection. The President appointed the following committee: Drs. W. H. Hoskins, F. S. Allen and J. W. Adams.

Dr. S. J. J. Harger now reported several cases of open-joint, with discharge of synovia. In those cases where the animal at this time became affected with strangles the cure was most rapid and complete. He wanted to know if there was a specific action upon the joint due to the streptococci causing the latter trouble. This discussion was necessarily short, as the meeting now adjourned, leaving the report of delegates from the Franklin meeting till Nov. 9th. DR. W. L. RHOADS, *Secretary.*

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The regular monthly meeting was called to order at 8.30 P. M., Wednesday, Nov. 3d, at the New York Academy of Medicine, with the Vice-President, Dr. Robertson, in the chair.

The following members responded to roll-call: Drs. Amling, C. C. Cattanach, J. S. Cattanach, J. S. Cattanach, Jr., Delaney, Ellis, Gill, Hanson, Lamkin, MacKellar, Neher, Robertson, Ryder and Winslow (14).

The minutes of the previous meeting were read and approved.

The Comitia Minora having no report to make, reading of papers was next in order.

Dr. Neher gave the meeting the benefit of his experience in "double current irrigation" and exhibited several instruments employed by him for that purpose, and also gave an interesting little "talk" on the indications for its use.

After a free discussion on this subject, Dr. Lamkin opened a discussion on the diagnostic value of malleine, stating that he did not feel disposed to rely upon it, and reported several cases to substantiate his views. The discussion on this subject soon became general and lasted for a considerable time.

Moved by Dr. Hanson, and seconded by Dr. Gill, that a vote of thanks be extended to Dr. Neher for his "talk" on "double current irrigation" and exhibition of the instruments, and to Dr. Lamkin, for his reports on the use of malleine. Carried.

Dr. Gill also made the suggestion that Dr. Neher send a cut of the instrument to the veterinary journals for the benefit of the profession.

For the Publication Committee Dr. Gill reported that all the matter connected with New York was complete and that the rest of the matter was in such shape as to be out in about two weeks. Moved and seconded that the report be accepted. Carried.

Moved by Dr. Hanson and seconded by Dr. C. C. Cattanach, that the Secretary notify all members of their indebtedness to the association before the next meeting. Carried.

Moved by Dr. Gill, that a committee be appointed to investigate in reference to registration of Messrs. Grenside and Dinkston. Seconded. Carried.

President Robertson appointed Dr. Gill to act as a committee of one to search the register.

Moved and seconded, that the meeting adjourn. Carried.

ROBERT W. ELLIS, D.V.S., *Secretary.*

THE VETERINARY MEDICAL SOCIETY OF THE ONTARIO VETERINARY COLLEGE

held its first meeting of the college session, Oct. 13, 1897, and was called to order by Prof. Sweetapple in a few well-chosen remarks, after which the election of officers took place, resulting as follows: Secretary, C. W. Fisher; Assistant Secretary, J. S. Pollard; Treasurer, R. Macdonald; Librarian, W. L. Adams. The meeting then adjourned.

Since then meetings have been held weekly, presided over by some member of the faculty. The following papers were read by members of the senior class, and duly discussed by all: "Navicular Disease," S. S. Treadwell; "Chloral Hydrate," Alex. McGregor; "Arnica," R. Macdonald; "Mange in Dog," C. E. S. Brind; "Tuberculosis," W. H. Pethick; "Navicular Disease," A. E. Atwood; "Shoeing," E. R. Stockwell; "Contagious Disease of Swine," A. C. Walker; "Examination for Soundness," G. W. Mackie; "Castration," J. E. Ellis; "Parturient Paralysis," J. A. Raleigh; "Removal of Eye-Ball of Dog," Alex. McGregor; "Sunstroke," C. E. S. Brind; "Indigestion in Dog," I. W. Parks; "Acute Laminitis," E. B. Shaw; "Ascites in Dog," R. Macdonald; "Simple Ophthalmia," H. R. Clark; "Purpura Hæmorrhagica," J. P. Straughan; "Parturient Apoplexy," G. W. Mackie; "Inversion of Uterus," J. S. Pollard; "Lipoma of Eye," F. J. Neiman; "Thrombosis of

Metacarpal Artery," A. E. Atwood; "Poisoning in Dog," J. D. Bell; "Choking in Cow," B. W. Powell; "Acute Indigestion," D. McKenzie; "Mammitis," W. H. Pethick.

C. W. Fisher, *Secretary.*

MASSACHUSETTS VETERINARY ASSOCIATION.

The regular monthly meeting was held at 19 Boylston Place, Sept. 22, the President, J. F. Winchester, in the chair. Members present were: Drs. Burr, Emerson, Howard, Lee, Lewis, McLaughlin, Parker, Peters, Pierce, Rogers, Sheldon, Stickney, Winslow and Winchester.

The minutes of the previous meeting were adopted as read. The Executive Committee reported favorably on the election of Dr. D. L. Bolger, of Cambridge. By the vote of the association Dr. Bolger was declared elected.

Drs. Winchester and Parker were given a vote of thanks for their report of the annual meeting of the U. S. V. M. A.

The subject of a State Veterinary Bill was fully discussed, and Drs. McLaughlin, Howard and Parker were appointed a Committee on Legislation.

Several interesting cases were reported.

Dr. Winchester showed two specimens, taken from the choroid plexus of the lateral ventricles, which were covered with what looked to be a calcareous deposit. They were given to Dr. Frothingham for analysis.

Dr. Peters reported a case of strangles which on post-mortem showed the same deposit.

Meeting adjourned at 10.45 P. M.

H. S. Lewis, *Secretary.*

NORTH CAROLINA VETERINARY MEDICAL ASSOCIATION.

This association met in the Central Hotel, at Charlotte, Sept. 7 and 8, and was called to order at 7 P. M. by the President, Dr. C. R. Ellis. On roll-call the following members were present: Drs. C. R. Ellis, Charlotte; J. W. Petty, Greensboro; H. G. Bessent, Durham; H. T. Bauer, Greensboro; H. B. Murray, Hickory; J. R. Petty, Pittsboro; Ashcraft, Monroe.

The President's address was very encouraging, and showed the interest he was taking in the veterinary work and the advancement of the same in this State.

On motion, Drs. Charles H. Lockwood, B. S. Griffin and B. E. Harper were elected members.

The Secretary and Treasurer's report was read and adopted.

The report on Legislation showed that a hard fight had been made for our bill in the last Legislature, but only passed the Senate. The same committee was appointed to continue the work.

Adjourned to meet in Greensboro, N. C., in December, 1897.

The second day was spent in visiting the stock and dairy farms around the city and other places of interest.

J. W. PETTY, *Sec. and Treas.*

GENESEE VALLEY VETERINARY MEDICAL ASSOCIATION.

The veterinarians of Western New York held a meeting at the Livingstone Hotel Nov. 9th, and perfected an organization to be known as the Genesee Valley Veterinary Medical Association. Veterinarians were present from the surrounding towns as follows: Dr. A. Drinkwater, Rochester; Dr. W. G. Dodds, Canandaigua; Dr. A. George Tegg, Rochester; Dr. L. R. Webber, Rochester; Dr. Rich, Avon; Dr. French, Honeoye Falls; Dr. Taylor, Henrietta; Dr. Steiner, Bergen; Dr. Hill, Walcott; Dr. Leffler, Geneseo; Dr. Earl, Palmyra; Dr. Knight and Dr. R. Palmer, Scottsville; Dr. McKenzie, Rochester.

The following officers were elected: President, Dr. Drinkwater; Vice-President, Dr. Dodds; Secretary, Dr. Tegg; Treasurer, Dr. Webber. Censors, Drs. Rich, French and Taylor.

The next meeting will be held at the same place on Dec. 9th, when papers will be read by Drs. Steiner and Palmer.

VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY.

The thirty-ninth regular meeting was held at the State Street House, Trenton, October 14th, 1897, Dr. Arrowsmith, President, in the chair. Roll called and minutes of previous meeting read and approved.

After the regular business of the association was disposed of, it was moved and carried to dispense with the reading of papers at this meeting and devote the time to the preparing of bills to be presented to the next Legislature.

Dr. Miller moved the Secretary write a letter of condolence to the family of the late Dr. Rudolph Leis, who was at one time a member of this association. Seconded and carried.

Moved and carried that the Secretary present to the Trustees a notice in writing of the proposed changes to the by-laws.

Adjourned to meet at Trenton in April, 1898.

S. LOCKWOOD, *Secretary.*

PENNSYLVANIA STATE BOARD OF VETERINARY MEDICAL EXAMINERS.

The next examination of the Pennsylvania State Board of Veterinary Examiners will be held December 20 and 21, 10 A. M. Those wishing to present themselves before the Board can learn all details as to the place of examination by communicating with the Secretary, 205 N. 20th St., Philadelphia.

S. J. J. HARGER, *Secretary.*

NEWS AND ITEMS.

W. W. YARD, D.V.S., of New York City, has located in White Plains, N. Y.

MASSACHUSETTS is in line with a State Veterinary Bill for the coming legislature.

DR. JAMES L. ROBERTSON, of New York City, suffered the loss of his venerable father on Nov. 18, aged 89.

DR. W. E. A. WYMAN, of South Carolina, is at the McKillip College, Chicago, studying bacteriological and pathological branches, and clinical medicine.

DR. F. C. GRENSIDE, formerly manager of the Belwood Stud, the property of Mr. S. S. Howland, has located at Durland's Riding Academy, New York City.

DR. ALEXANDER GLASS, of the University of Pennsylvania (Veterinary Department), is studying human medicine, and so is Dr. Geo. Jobson, Jr., of Franklin, Pa.

DR. J. B. PAIGE read a paper before the Massachusetts Veterinary Association, November 24th, on "Veterinary Education in European Schools," illustrated by fifty lime-light views.

DR. VAN DE VELDE reported at the last meeting of the Biological Society that at Louvain they had been for two years past immunizing a horse by means of cultures of a single variety of the bacilli of typhoid fever.

R. R. MORRISON, D.V.S., who has just returned to his home in White Plains, N. Y., after a six months' sojourn in South Africa, was appointed an inspector on the Rinderpest Commission by the government of Natal, but when his notification arrived he had departed for America.

PROF. LEONARD PEARSON, of the University of Pennsylvania, read an important paper before the November meeting of the

Keystone Veterinary Medical Association on methods of meat inspection now in vogue throughout the civilized world, which received enthusiastic attention of the members. It will be published in the January REVIEW.

THE FOREIGN HORSE MARKET.—The Department of Agriculture is corresponding extensively wiih horsemen in the United States and in foreign countries and has an agent abroad collecting information concerning the horse markets of France, Germany, and other European countries for the purpose of issuing a bulletin for the benefit of our horse-breeders who desire to compete for a foreign market.

EDITOR HOSKINS, of the *Journal*, has added to his many and varied duties that of lecturing upon jurisprudence and ethics at the University of Pennsylvania. Certainly the students of this school are to be congratulated upon their opportunity to receive inspiration upon these important subjects from one so qualified to speak. We further felicitate the editor upon his decision to serve the profession for which he has done so much in even another capacity, and trust this beginning may lead him further into the domain of the teaching faculty.

CHIEF SALMON, of the Bureau of Animal Industry, went to Buffalo in the early part of November to investigate the conduct of the local branch of the Bureau located there. There has been trouble between Inspector Hinkley and his subordinates, but there is apparently nothing of a serious nature, jealousy probably being a factor in the production of the charges. Many witnesses were called, and three days were occupied in taking testimony, but the decision was withheld until the Secretary of Agriculture was consulted.

A DAIRY INSPECTOR FOR ELIZABETH, N. J.—The Board of Health of Elizabeth, N. J., at a recent meeting passed a resolution authorizing the appointment of a Dairy Inspector, "whose duties shall be to inspect all cattle that are or may be kept or intended for meat or milk production, such inspection to be made whenever the Board shall have cause to suspect the existence of contagious disease among cattle, or such as might be a risk or danger to the food or milk supply." Under this resolution, F. A. Zucker, D. V. S., graduate of the American, class of '96, was appointed to that position.

THE REPORT OF THE SECRETARY OF AGRICULTURE for 1897 was published Nov. 15th and is probably the most comprehensive document that has ever emanated from that department. Especially is this true with reference to the division relating to the work of the Bureau of Animal Industry, it dealing very fully with the system of meat inspection, showing the number of ante-mortem examinations, as well as the number of post-mortem inspections, the microscopical inspection of pork, inspection of vessels and export animals, Southern cattle inspection, inspection of imported animals, the proposed extension of meat inspection, destruction of cattle ticks, black leg, rabies, eradication of sheep scab, hog cholera and tuberculosis, work of the biochemic division, the biological laboratory, etc.

INEXPERT TESTIMONY.—The editor of the AMERICAN VETERINARY REVIEW, commenting upon some remarks in these columns anent the conflicting testimony of the alleged experts in the Luetgert trial, thinks that the trouble lay in the fact that the human anatomists were talking on a subject that they actually knew little or nothing about, namely, comparative or veterinary anatomy. The writer evidently believes that there are many veterinary anatomists in this country who could give the points of osseous differentiation between a woman and a hog off-hand; indeed, he says so in nearly these words. It would perhaps be well if both sides called in veterinary instead of human anatomists at the next trial. It could then possibly be seen whether or not the hired witnesses in the first trial had testified on a subject of which they had no knowledge, when a man's life was dependent upon the nature of their testimony.—(*Medical Record.*)

A PROLIFIC BITCH.—When Albert H. Van Brunt, the well-known breeder of St. Bernard dogs of Flatlands, L. I., began breeding he purchased a smooth-coated bitch named Alpha, by Champion Ben Lomond, he by Champion Barry, dam Champion Apollona, by Champion Apollo, she being then a puppy. He still owns her, and she has recently given birth to what he believes to be her last litter, as she is now nine years old. Her first litter was whelped when she was eighteen months old, the number at this birth being 12, then 13, 14, 15, 16, 17, after which the number began to decrease, thus: 15, 12, 11, and finally 5. About three years ago she contracted pneumonia after parturition, and the entire litter died, since which time at each successive whelping she became feverish and in a day or two every pup would die, none living except three which were given to a foster mother immediately after birth. Her record to date is 130 pups, and she is only nine years old.

EXPERIMENTS IN DIPPING AGAINST TEXAS FEVER.—*Washington, D. C., Oct. 25.*—Dr. Norgaard, Chief of the Pathological Division, Bureau of Animal Industry, has returned to the Agricultural Department after a series of experiments in Texas with cattle carrying the tick which causes Texas fever, and reports that an investigation of several hundred head of infected cattle dipped in the paraffin solution demonstrated that the wash kills the tick without producing any injurious effect upon the cattle beyond a temporary irritation of the skin. A number of States are now preparing to experiment with the dipping process. In Illinois the experiment will be conducted by the State Live-Stock Sanitary Board, and in Missouri by the State Board of Agriculture. If the paraffin and lard-oil solution as used by Dr. Norgaard proves entirely successful it is estimated that it will work a saving to stock-raisers of between fifteen and twenty million dollars annually.—(*Breeder's Gazette.*)

A NEW CALIFORNIA HORSE DISEASE.—Dr. Isaac W. O'Rourke, city veterinary of San Francisco, has discovered a new disease among horses. It appeared only recently, but is spreading over the State with remarkable rapidity, particularly on the lands adjoining the San Joaquin and Sacramento rivers. Dr. O'Rourke went to Tubbs' Island, on the San Joaquin River, last Wednesday, to inspect 200 horses belonging to William Tubbs, the San Francisco cordage manufacturer. He found fifty of the animals suffering from the mysterious disease. It manifests itself in the form of abscessed swellings on different parts of the body. Some of these attain an enormous size. So far the number of deaths resulting from the malady has been small. It is Dr. O'Rourke's opinion that the disease grows out of fly bites, and was introduced here by foreign stock of the poisonous fly, which is a stranger in California, is smaller than the common house fly and yellow in color. For the treatment of the disease the veterinarian recommends compound camphor liniment.—(*Breeder and Sportsman.*)

THE TUBERCULOSIS CRUSADE IN HAWAII.—Apropos of the letter of Dr. W. T. Monsarrat, in the October REVIEW, the following is found in the *Pacific Commercial Advertiser*, published in Honolulu: "Protests against the killing of dairy cows affected with tuberculosis are still being received by the Board of Health, and the fact that some of these bear the ear-marks of a lawyer's office gives ground for belief that there are complications ahead. A plan was at one time proposed, which if carried into effect, might have done away with any protests whatever, it is said. It was that the dairy cows be tested for tuberculosis, and in the event of their being affected that they be tagged. This done, an official report of the cows at each dairy found to be affected could have been published. Not a cow would have been killed, but the effect on the public would soon have made the dairymen see the necessity of doing away with such animals. However, the present system is a speedy one, and tends to give the public confidence in the work of the Board of Health. Among all the cows found by the tuberculin test to be affected with tuberculosis, they have not made a single error. The most careful and painstaking attenfion is paid to each case."

NO PLACE FOR VETERINARIANS.—A COUNTRY WITHOUT DOMESTIC ANIMALS.—Such a country is Japan, according to a picturesque account published in a Russian journal, communicated by M. E. Muller to the Paris Geographical Society, and reported in the *Revue Scientifique.* "The inhabitants of Japan neither eat beef nor drink milk, and consequently the cow is of no use in their domestic economy. The Japanese do not ride horseback; their two-wheeled vehicles are drawn and their palanquins are carried by porters. Besides, they have neither mules, asses, nor other beasts of burden. There are numerous dogs in the country, but they all run wild. The Japanese keep these animals neither for the chase nor for protection. It is very rare one meets a domesticated dog, and such a dog always belongs to a foreigner. As to sheep, goats and swine, the Japanese do not raise them. The place of the wool that sheep could furnish is taken with them by silk, which is very cheap, so they do not wear woolen garments. In a Japanese establishment fowls are seen rarely, ducks and pigeons still more seldom; they are raised only to satisfy the demands of foreigners. Some persons in the suburbs of Yeddo raise cattle, but not for purposes of rural economy. The animals are used only for religious ceremonials; in fact, they are intended to draw the funeral car when some member of the Mikado's family dies."—(*American Cultivator.*) And yet, Japan has a good veterinary school and a *Veterinary Recueil*, published monthly.—(EDITOR.)

BOUND VOLUMES REVIEW FOR SALE.

Twelve nicely bound, very clean, indexed volumes REVIEW. First contains 9, 10, 11, 12, Vol. VIII., and 2, 8, 9, 10, 11, 12, Vol. IX.. The remaining volumes run to and include Volume XX. Here is a valuable veterinary library, containing precious information, found nowhere else. A rare bargain cheap. Indispensable to a veterinarian. Don't miss this chance. Price, $35. S. R. HOWARD, Hillsboro, Ohio. Box 202.

AMERICAN VETERINARY REVIEW.

JANUARY, 1898.

All communications for publication or in reference thereto should be addressed to Prof. Roscoe R. Bell, Seventh Ave. & Union St., Borough of Brooklyn, New York City.

EDITORIAL.

SOWING THE WIND AND REAPING THE WHIRLWIND.

> "If a law were simultaneously enacted in every State of the Union which fosters a veterinary college to compel every prospective student to take a matriculant examination, and every graduate to pass the Board of Regents, it would be fair for all hands. Where, however, one State places barriers in front of her colleges, and other States hold out inducements to receive them, the result is unfair. Young men seeking to acquire a professional knowledge will not select a seat of learning which is so hampered by State laws as to make his chances of success less than he can procure in other States. There can be no doubt but that the framing of the recent law was primarily in the interest of higher education, but the schools in this State cannot hope to attract an increased number of students from other States who expect to locate outside of New York . . . "—*Editorial in* REVIEW, *October, 1895.*

We have never laid claim to being a prophet nor the son of one, but the above quotation from these pages, printed more than two years ago, shows that the effect of a cause was pretty accurately foreseen. If this had been written to-day as a history instead of a prophecy, the principal change in its construction would be in the fact that the disastrous working of the Regents' regulations was not sufficiently appreciated. For instance, we did not foresee that, not only "could the schools in this State not hope to attract students from other States," but that their unreasonable demands upon those young men resident in the Empire State seeking to enter her medical schools, would be driven precipitately from within her borders to acquire their education. But all this has been done, and more than this. It has so reduced the attendance at her medical, dental, and veterinary colleges as to discourage them and break their enthusiasm, and when this has been accomplished their greatest factor for good has been destroyed.

Three years ago the matriculant requirement to enter a veterinary college in New York State was the satisfactory exhibition of the possession of a good common English education, accompanied by evidences of good moral character. When the colleges placed themselves under the Regents, who, at first made a moderate and reasonable demand of proficiency, the number of students decreased about one-third, but, as a period of unprecedented financial and commercial depression had settled upon the country, their requirements could not be charged solely with the deflection; when their demands reached twenty-four counts a still greater slump occurred, though students seemed willing to risk their fates for the sake of greater proficiency; but when the Regents stepped forward for the session of 1897-98 and asked young men seeking a knowledge of medical, dental, and veterinary sciences to put up forty-eight counts, including subjects totally irrelevant to the professions they essayed to enter, they balked, retreated, and departed for other States, whose laws are more in keeping with progress and common sense, and where higher education is attained by steps and not by flights.

The effect of the drain upon the colleges is not so apparent this year as it will be next, nor the next, because all have those in attendance who entered under the lesser requirement; but when they have been graduated, when the classes consist only of those who have matriculated under the forty-eight counts, little else than empty benches will greet the eyes of the faculties. If publication were made to-day of the actual number of students enrolled under the latest demand of the Regents, we fear that even that body of sanguinary gentlemen would be aghast at the ruin they have wrought to the once far-famed medical schools of the Excelsior State. If the men who have formulated the forty-eight counts can explain what proficiency in a veterinary student they hope to enhance by requiring him to pass a matriculant examination in "civics," "economics," and "rhetoric," they will display more knowledge than one would suppose they possessed if they judged them by the standard set in their demands of the student.

There is only one salvation for the professional schools of New York State, and that consists in a modification of the law; an amendment, having higher education as the objective point, but tempered by reasonable requirements, with some regard for the perpetuity of our honorable institutions, and the welfare of the Commonwealth.

THE MODERN HORSE SHOW.

The exhibition of horses in the show ring is comparatively a new thing in this country. Agricultural and live stock fairs, where horses and other animals are exhibited in competition, are much older institutions. The "horse show," intended for the exhibition and competition of the soliped only, of different breeds and in different capacities, patronized by fashionable society, dates back but a few years. During the depressed days in all industries the value of horses decreased to such an extent that their treatment during sickness or disability was often not attempted, for the reason that it was cheaper to buy a new one at the prevailing low prices, than to bother with the incapacitated one. This was extremely disheartening and unprofitable to the veterinarian. No one at all posted upon current events will gainsay the assertion that horseflesh is rapidly recovering its normal condition in value and utility, and that the bicycle craze is just as rapidly diminishing in popularity among those who ever had any love for the horse or who can afford the pleasure and luxury of his maintenance. Nothing has done more to sustain and increase an interest in the soliped as a pleasure animal than the modern horse show. They have multiplied so rapidly that almost every city of any pretensions has its annual exhibition. A great deal of money is thus thrown into the pockets of the breeder, the dealer, and the veterinarian by exhibitors in their efforts to capture the blue ribbon, and the horse itself is greatly benefitted by the encouragement thus given to produce a better class of animal. But, as with everything in America, the tendency is to overdo, to pervert its purposes into commercial channels, and finally to precipitate a boomerang. The fall shows of 1897 have had a greater degree of success than ever before; larger prices have been paid for eligibles, and the entries have been record breaking. But a large percentage of these entries were the property of dealers, placed there in the hope that the acquirement of a ribbon would so enhance the money value of the recipient as to result in a handsome increase in the price which he will fetch at the "horse-show sale" which is to immediately follow the "show." We have been told that a Western dealer has returned to one of the horse show associations where he exhibited, with his compliments, the money prizes won by his horses, being content with the ribbons and the pecuniary good they will result in to his entries. Whether a knowledge of the exhibitor's intention has influenced the decision of the judges or not, such a transaction is monstrous, and can only work the greatest injury to the show, and the cause which it was established to foster and encourage. Neither is it fair competition to expect a private owner to exhibit his horses by the side of the dealer, who is working for a single object, and can afford to bestow more time and money upon his exhibit than if it were intended for service in his private stable. Besides, there is always the suspicion that the dealer is favored, and it will not be very long before a private owner will refuse to place his horse in a class where a favored dealer has one or more entries. The time to check an evil is before its baneful influences have become strikingly manifest, and the REVIEW sounds the early note of warning that unless these entries be restricted or refused altogether, the popular and profitable horse show will soon enter a period of decadence that will mean its ultimate extinction.

ALTHOUGH the decision of the Executive Committee, U. S. V. M. A., as to the next meeting place had not been received when the REVIEW went to press, Omaha looked like a winner.

FOR THE IMPROVEMENT OF MEAT INSPECTION.

We print elsewhere an account of a public meeting held in Philadelphia, under the auspices of the Woman's Health Protective Association, at which the subject of the meat supply of that city was made the occasion for very full consideration, and which has caused a great awakening of public interest in the vital question, and which can but result in the greatest good to the health and wealth of that and other municipalities. The meeting was largely the outcome of agitation started by some of her public-spirited veterinarians, who not only made addresses themselves and clearly showed the sources of contamination and the inadequacy of present methods, but they induced many prominent veterinarians from other points to lend the strength of their presence and arguments for the furtherance of the objects. Among those who addressed the meeting were Dr. D. E. Salmon, Chief of the Bureau of Animal Industry, Washington; Dr. A. W. Clement, State Veterinarian of Maryland; Dr. H. D. Gill, of the New York Health Board, and Dr. R. S. Huidekoper, President of the Veterinary Medical Association of New York County.

The effort, we are assured through a letter from Dr. W. Horace Hoskins, who was largely instrumental in the success of the meeting, "has resulted in a movement which will terminate in a better system of meat inspection and the removal of many of the features that are now so objectionable in the system that is now in force."

Such a concerted movement will do more good than all the pages that can be written on the subject, and the example of the Philadelphians should be followed by the veterinarians of every city where lax inspection laws maintain, and that means in every city of the Union.

PROFESSIONAL COURTESY.

That veterinary science is a progressive science no one will deny who is at all familiar with the vast amount of original research and discovery that is given to the world each year by its members. These discoveries are often of the utmost importance to the human race, preventing in a great many instances the spread of epidemic diseases among man and his domestic animals. That men engaged in original lines of research, such as biology or its kindred branches of medicine and surgery, often find themselves sorely in need of scientific advice and direction, none will deny. That these men will, as a matter of course, naturally turn to the members of their own particular profession to seek this knowledge or information they are in quest of, is but natural to suppose. Many of the most important discoveries in the field of human medicine have often been the result of the knowledge gained by the investigator from questions sent to practitioners in all parts of the world and the answers returned thereto. Professional pride and courtesy should be just as strong among the members of the veterinary profession as in that of the medical; it is a duty we owe both to ourselves and our fellow practitioner, to answer cheerfully and promptly as best we can all communications sent to us from a distance by a professional brother who is seeking after legitimate knowledge in our noble profession. W. J. M.

LEADVILLE, COLORADO, has secured the necessary action by her local Board of Health to inaugurate dairy inspection for a city in the clouds. If such advance can be secured by intelligent persistency for public sanitation for a city in the mountains of Colorado, ought not veterinarians in other cities be encouraged to agitate the subject for their respective localities?

A COMMENDABLE EXAMPLE.—Attention is called to the two case reports of Dr. McCrank, of Plattsburgh, N. Y., and his remarks concerning the interchange of professional opinions through the medium of the journals, and the beneficial effects which they will bring about. The REVIEW has ever held these views, and has striven hard to promulgate them among its readers.

ORIGINAL ARTICLES.

SOME REMARKS ON ANTI-HOG CHOLERA SERUM.

By Dr. C. Fisch, St. Louis, Mo.

Notwithstanding the eminent work done by men like Salmon, Theobald Smith, Billings, and others, the question of specific causative micrö-organisms in hog cholera, swine pest and swine fever, has not been cleared up to the point of allowing a successful attempt at establishing an etiologic therapy in these diseases. A part of the confusion reigning in this domain is no doubt due to the fact that in the laboratories a great number of bacteria have been cultivated and experimented upon under the name of hog cholera or swine pest bacilli, which in reality had no relation to these diseases whatsoever. This, especially, pertains to the work of Metschnikoff and of his disciples. Another group of observers has been misled by the protean nature of the epizootic in question, and by the phenomenon, that swine pest and hog cholera may be met with both of them in one and the same animal, either coördinated or the one grafted, as it were, upon the other. This fact has, among others, been the stumbling block for Voges, * who in an otherwise eminently able discourse, has accumulated a valuable mass of material.

Whenever we attempt to deal with swine plague (the word "swine pest" ought to be used only comprehensively for swine plague and hog cholera) and hog cholera, we must first of all remember that either one of them may appear in one of three principal types: as a mainly cutaneous, broncho-pulmonal, or intestinal disease, and that very often two of these types combine to form a picture of mixed symptoms. Omitting the cutaneous type as the least frequent, the two others combine in such varying degrees, that practically no one case resembles the other. It is true that in true hog cholera the intestinal symptoms largely predominate, while swine plague as a rule exhibits

---

* Zeitschr. für Hygiene und Infectionskrankh. XXIII, p. 149 ff.

a more equal affection of both respiratory and digestive apparatus, but this is so little constant, that it can only tend to increase the confusion to reserve the name of pneumo-enteritis for the latter affection. The word "pneumo-enteritis" ought only to be used with the meaning that first Klein connected with it, that is, as indicating a pulmonary and intestinal affection in general, without regard to the specific causative agent (swine fever). For our purposes it may be sufficient to mention that experimentally pulmonary and intestinal lesions may be produced *ad libitum* in swine plague as well as in hog cholera.

If so we must admit that the pathologic anatomy in a great number of cases does not allow of a differentiation between the two affections; Voges and others, were mistaken, on the other hand in asserting that the causative micro-organism was the same in both diseases. The erroneousness of this assertion has indisputably been brought out by Salmon, Smith, Billings, Welch and Clement, and the finishing touch to its refutation has been added by Hueppe * in his investigations on the hæmorrhagic septicæmia.

According to these investigations the swine plague, bacillus, on the one side, and the hog cholera bacillus on the other are well established and accurately defined as to their morphologic and physiologic characteristics. Without mentioning minor traits, it is above all the motility (presence of flagella) of the hog cholera bacillus that absolutely separates it from the organism of the swine plague. Hog cholera bacilli, furthermore, never form phenol or indol in pepton solutions, but they cause milk to assume an alkaline reaction, and to slightly gelatinize. The bacilli of swine plague (Schweineseuche-Schuetz) are always immotile. They form in peptonized fluids, phenol and indol and produce in milk a very decided sour reaction. In these two latter characteristics they resemble the micro-organisms of the swine plague of Marseilles (Rietsch and Joubert),† which, however, are very actively motile, like hog cholera bacilli.

---

* Berliner klin. Wochenschr., 1886, No. 44.

† Comptes Rendus de l'Académie de Science 106.

The characteristics mentioned are perhaps the most prominent ones, but they do not stand alone, and together with many others which it would take too much time here to mention, have established beyond a dispute the autonomy of the specific micro-organisms in the pathologic affections under discussion. But we would be wrong in concluding, that now the differentiation between the latter by means of a bacteriologic examination had been made an easy task. The researches of Welch and Clement * have taught us that very often in hog cholera (intestinal form) a secondary pulmonary infection by swine plague bacilli supervenes, completing the picture of pneumo-enteritis.

What is more perplexing still, Smith has demonstrated the fact that in the bronchial tubes of normal hogs, there are always present certain swine plague-like bacilli of little pathogenic power, which under the weakened condition of the organism produced by a hog cholera attack, assume a higher virulence, entering the lungs and setting up the pulmonary complication.

This embarrassing multitude of militating factors is made more perspicuous by the fact that all of the affections mentioned either appear in an acute form or take a more or less chronic course. It was indispensable to deal with them here shortly in order to show to which degree difficulties surround the practical administration of an etiologic therapy.

Considering the vast losses caused by hog cholera, the promising task of immunizing or of curing animals by means of such an etiologic therapy have been very numerous. Already, in 1886, Salmon and Smith succeeded in immunizing smaller animals by the administration of germ free culture-fluids, and Schweinitz claimed to have achieved the same object by certain substances, which he prepared from pure cultures, and which he called "sucholotoxin" and "sucholoalbumin." For the immunization of hogs the most diversified methods have been employed, blood of diseased animals, dead or attenuated cultures, etc., being used as vaccine. But none of these methods have as yet scored a final success; some of them, especially the intravenous injections, had

---

* Baumgarten's Jahresber. 1893, p. 135.

to be abandoned as decidedly dangerous. I need not enlarge on them in this paper, because they are well-known things to my readers.

The reasons why these attempts as well as some others to establish passive immunity by injection of serum of immunized animals, have failed are to be looked for in several directions. In the first place quite a number of investigators have conducted their experiments with germs that were not hog cholera germs at all; I already mentioned Metschnikoff as laboring under such a *quid pro quo*, and it seems that Selander too has fallen a victim to the very same error. Certainly a great many failures in this country are due to it. In the second place, very often the biologic qualities of the material (cultures) used were such as to make the possibility of a success questionable from the beginning; one peculiarity of the hog cholera bacillus is to rapidly lose its pathologic character and virulence, and to become an almost harmless parasite. On the other side, an increase of this virulence is very difficult to obtain. That a great number of investigators have experimented with a bacillus of very low virulence is shown by the large doses used, by the protracted course of the disease in the animals experimented upon, and finally by the relative insusceptibility of some animals (chickens) for these bacilli.

I began my experiments with a hog cholera culture which I owe to the kindness of Dr. Welch. When I attempted to determine its virulence I found that, a suspension of 3 mg. of a 48 hours agar culture in physiologic salt solution, subcutaneously injected was necessary in order to kill a 1500- to 2000-gramme rabbit in from 6 to 8 days. To kill guinea-pigs I had to use much larger doses. My first efforts, therefore, were directed towards an increase of this virulence. The usual methods did not achieve this aim to any appreciable extent. After long experimenting I succeeded, at last, by injecting a large dose of fresh culture (suspension made with normal salt solution) into the abdominal cavity; after death one c. c. of the peritoneal exudate was administered intraperitoneally to another rabbit, and so on, until a passage through 11 animals had been reached; the amount injected into the last 4 animals was gradually diminished, so that rabbit No. 11 received only .10 c. c. The animals were as near as possible all of the same size and breed, and all of them were males; they weighed from 1600 to 2200 grammes.

In the course of this series the time elapsing between injection and death grew shorter and shorter, so that the last rabbit died 48 hours after inoculaticn. From the spleen of this rabbit pure cultures were obtained, and .5 mg. of a 48-hours agar culure of this material proved now to be sufficient to kill, when subcutaneously administered, a medium-sized rabbit within 48 hours. The same amount was needed to kill a 400-gramme guinea-pig in about the same time. The lesions produced in both kinds of animals were those typical to this infection, and which have been described by many authors. I must mention, however, that while the less virulent races produced an abscess at the site of the injection, I never observed any local reaction with the more virulent ones. By an occasional passage through a rabbit it was easy to maintain this degree of virulence.

I have no doubt that it would have been an easy task to, in the way described, increase the virulence beyond the point reached by me; from what Voges says, I must infer that he has arrived at higher degrees. But I concluded not to exaggerate this rabbit—or guinea-pig—virulence, because it was easily possible that it was only one-sided, and had no bearing on the behavior of the bacilli towards hogs.

When smaller doses than .5 mg. were injected, the animals mostly recovered after a protracted illness. The blood serum of such animals had a very decided agglutinating power on the bacilli, a phenomenon that has already been described by Cashin * and others. In some cases this power was apparent at a dilution of 1 to 120. I mention this fact here because from it the conclusion has been drawn, that like in typhoid fever no antitoxic substances were formed in the blood of animals recov

---

* New York Medical Journal, 1897.

ered from the disease. How far this assertion is correct we will see later.

Having convinced myself from a thorough study of the experiments of other observers, that an active immunization upon a large scale was, if not impossible, certainly impracticable, I endeavored to establish passive immunity by means of the serum of animals immunized against my virulent bacilli. But the main question to solve was: To what degree is hog cholera a toxic disease?

If hog cholera bacilli in suspension, that have been killed by being heated for one hour to 60° C., are injected into the abdominal cavity of a rabbit, the animal dies in a short time from a purulent peritonitis; the exudate is always found to be perfectly sterile, in cover glass specimens, no remnants of bacilli can be found. On the other hand, if hog cholera bacilli are extracted for several days with a slightly alkaline salt solution, separated from the latter by filtration and again suspended in water, they now, when injected into an animal (rabbit) like before, cause only a very slight disturbance. The filtrate, however, subcutaneously administered after being neutralized with acetic acid, proves to be exceedingly toxic.

Finally, if very virulent hog cholera bacilli are grown in peptone bouillon for about a week, the culture fluid passed through a porcelain filter is comparatively harmless, large doses being required to bring about any effects in animals treated with it.

From these three experiments we gather the information, that our bacilli, though producing a powerful toxine (or several toxines) do not excrete it (or them) into the culture medium. The latter only becomes charged with it (or with them) corresponding to the number of bacilli dying and decaying. In accordance with this assertion experience teaches us that the older the bouillon cultures, the more toxic they become; in fact, the filtrate of a culture that has been kept for six weeks in an incubator at 37° C. is so poisonous in its effect, that a few tenths of a c. c. are sufficient to kill rabbits and guinea-pigs in a short time. That such a poison, or a similar one, at least is present in the organs of animals dead from hog cholera infection, is easily shown by grinding up their spleen, and extracting it with a ten per cent. glycerine solution ; the resulting fluid is of a fairly high toxic potency, as shown in the animal experiment.

There is no doubt, in my mind, that these facts reinforce the toxic theory ; the individual case may, of course, offer predominating the clinical picture of septicæmia.

That it is an easy thing by means of cultures and culture products to immunize small animals, has already been shown by Salmon. But nobody as yet has shown, that the blood of such animals has protective or curative properties. Perhaps this is due to the fact that it is very difficult, in rabbits at least, to establish a tolerance for high doses of the living bacillus. They, too, are very susceptible for its poisonous products; continued injections produce some kind of a maranthic condition in them which it is impossible to overcome.

Even in higher animals this is the imminent danger, and great care must be exercised in the dosage and increase of the injections. For my experiments I used a donkey and horses. The former had soon to be rejected on account of nasty and deep-seated abscesses which regularly formed after each injection, and greatly helped to reduce its physical strength.

On the horses, too, the treatment had an exhaustive tendency. I began with a small dose (1 c. c.) of toxin (filtered 6 weeks culture) given hypodermically, and increased it in the course of 3 months until 500 c. c. were given at one injection. The injections were given about every week. The reactions were quite severe, general as well as local. The fever ran up to 104° and 104½° F. for several days, and at the site of the injections enormous œdemate and gelatinous infiltrations formed. It was peculiar that the latter did not grow less as the treatment progressed. After these high toxin doses had been reached, living 48-hours old cultures were injected, and up to 200 c. c. were given. In contradistinction to non-treated animals, these cultures were borne nicely, and did not produce any abscesses. The first blood was drawn after such a treatment that had lasted for four months. The serum separated out nicely and was preserved by means of pieces of camphor.

For the future I shall follow the method of Huber and Blumenthal * (mixing the freshly drawn blood with an equal amount of salt solution, thorough shaking, addition of 1 per cent. of chloroform, and filtration after 24 hours). While thus the antitoxic potency is the same as in serum prepared after the ordinary method, the output is twice as large.

With appropriate methods it can be shown that this serum possesses bactericidal and antitoxic properties. It neutralizes comparatively large amounts of toxin, and effectively protects animals against infection. .10 c. c. is sufficient to counteract inoculation with a fatal dose of living bacilli in a rabbit, while it takes a little more to protect a guinea-pig.

.5 c. c. when injected not later than 24 hours after inoculation with the fatal dose cures a rabbit in most cases, but not with absolute certainty. It seems that individual rabbits are much more susceptible than others, so I tried to use animals as far as possible of the same size, sex, and breed. Larger amounts of serum were not tried on these animals for practical reasons.

Serum treatment was unsuccessful in all cases, where the time between infection and beginning of the treatment exceeded 36 hours (in rabbits).

A more accurate series of experiments were conducted on a number of young hogs. Three of them were injected with varying amounts of serum, and one, three, and fourteen days, respectively, afterwards injected intravenously with twice the fatal dose of a virulent culture. All of the animals remained healthy and undisturbed. A fourth animal that had not been treated developed promptly on injection of the bacilli a typical case of hog cholera. This experiment was repeated several times with the same results. It was found that one part of the serum, as it is now, protects 16,000 parts of hog, so that for a medium-sized animal a quantity of 5 c. c. about would be necessary for a pro-

---

* Berl. klin. Wochenschr., Aug. 2, 1897.

phylactic inoculation. In one case I succeeded in curing a hog which was not yet far advanced in the disease by three successive injections of 5 c. c. each. I cannot, however, yet consider my observations on this side of the question as complete. It is possible that by preparing a virus of higher potency than the one employed by me, and perhaps by pursuing the treatment of the horses for a longer time, the serum may be improved considerably. As it is, it has very decided advantages over any other method of treatment in this dreaded disease ; further observations will show how far its value goes.

In concluding this article I must refer back to my remarks on the etiology of hog cholera. Our serum will only benefit cases infested by the bacillus suipestifer, the hog cholera bacillus proper. The diagnosis ought, therefore, be made in every case with the utmost care and precaution.

METHODS OF MEAT INSPECTION.

By Leonard Pearson, B. S., V. M. D., Veterinary Department, University of Pennsylvania.

A Paper read before the November Meeting of the Keystone Veterinary Medical Association.

It is not necessary to submit to this audience any argument to prove the importance of meat as an article of diet. This is a matter that is so thoroughly understood and universally recognized that it may be accepted as axiomatic that meat is not only essential as food but that the activity of a people is indicated largely by the amount of flesh consumed. In 1890 the British Government published a table showing the amount of meat used in the different civilized lands. This table supports the statement just made. The amounts consumed per capita and per annum are as follows :

Australia, ...	111.6 kg.	Belgium and Holland,	31.3 kg.
United States, .	54.4 kg.	Austria and Hungary,	29.0 kg.
Great Britain, . .	47.6 kg.	Russia, ...	21.8 kg.
Sweden and Norway,	39.5 kg.	Spain, ...	22.2 kg.
France, ...	33.6 kg.	Italy, ...	10.4 kg.
Germany, ...	31.6 kg.		

It will be seen that the amount consumed in the United States is greater than in any other part of the world with the exception of Australia, where meat is so very cheap that only the more desirable portions are used as food, and the actual consumption is less than the figures indicate.

Since flesh enters so largely into our diet, and since it is derived from animals that undergo the same disease processes that we do, and is composed of such fragile compounds that it takes on irritant and toxic properties very quickly, unless handled with the greatest care, it is not surprising to learn that the control of this food has attracted the attention of sanitarians from the earliest times. The first meat inspection was under the control of ecclesiastical authorities, and in some orders, as the Mohammedans and Jews, it is carried out under the same direction to this day. Such an inspection when originated was as careful and thorough as the knowledge of the times would permit, but the regulations under which it is now enforced do not represent the most useful and efficient methods.

In the last century the general public was aroused, and many of the countries of Continental Europe passed laws providing for the inspection of meat, and some municipalities erected abattoirs where all of the slaughtering of the city should be carried on under competent supervision. More recently, since the bacterial origin of many diseases has been demonstrated, and the close relationship of many of the diseases of man and animals have been established, the importance of rational meat inspection has been greatly emphasized. At this time, all of the countries of Continental Europe and the British Isles have a system of meat inspection which, although incomplete in some places and in some details, is in the main sufficient to protect the consumer from the numerous maladies that may be contracted by eating the flesh of diseased animals or meat that has been improperly cared for or preserved.

The system of meat inspection that has proven most satisfactory in Europe, includes the establishment of a municipal abattoir under the direction of a veterinarian trained in meat inspection and it is provided that all animals killed locally shall be slaughtered in this establishment. All meat-producing animals are examined while living and after they are killed. Both inspections are made because there are some conditions that can not well be detected after the animal is slaughtered, but often have an important effect on the quality of the meat, as fever, fatigue, exhaustion, starvation, and excitement. After an animal is slaughtered, its organs and flesh are examined for evidences of disease that are directly transmissible to the consumer ; parasites that may be injurious, and other conditions which, while not directly transmissible in themselves, render the flesh indigestible or toxic, and thus produce digestive disturbances or more severe disease. The carcass is also examined for the purpose of discovering conditions that render the meat innutritious or offensive, such as chronic wasting diseases, emaciation, old age, immaturity, and advanced pregnancy. Moreover, the method of slaughtering and handling the dressed meat is supervised, and it is seen to that all of the steps are carried out in a cleanly manner, and that the meat is not necessarily contaminated by carelessness and filthy surroundings. The conditions and diseases to be sought for and avoided are so numerous that they cannot be discussed at greater length in this paper.

Germany has more than six hundred slaughter-houses belonging to municipalities ; each of these is under the direction of a veterinarian. In most of them there are separate halls for slaughtering the different kinds of meat-producing animals ; one each for cattle, sheep, and swine. The butchers in these cities pay a reasonable rental and are permitted to use all of the facilities provided, and to enjoy the advantages of buildings equipped with all possible labor-saving devices and modern conveniences. Each slaughter-house has a large cold storage chamber, which can be used by the individual butchers upon the payment of a small fee. In this way the butchers who kill but a few animals a week, and cannot afford to equip satisfactory establishments of their own, receive all of the benefits enjoyed by those who conduct large businesses. Moreover, their meat goes on the market with the official stamp of the inspector, showing that it is wholesome. The meat that is condemned is made into fertilizer by the establishment, on the account of the individual butcher, and this part of the business is conducted so well that it is usually possible to realize from twenty to twenty-five per cent. of the original cost of the animal. This saving cannot be effected under less favorable conditions.

In this country, the existing systems of meat inspection may be divided into two classes, national and local. For some years the United States Bureau of Animal Industry has conducted a constantly improving meat inspection service, that now extends to animals killed for export and for interstate trade in the principal meat-packing centres of the country. The work is performed by veterinarians, who examine all carcasses, stamp those that are sound, and condemn those that are unfit for food. There is also a microscopical examination of pork for the detection of trichinæ, but this extends only to the products prepared for export. Some of the cities in the United States have also organized more or less complete meat inspection systems. The system in New Orleans, originated and developed principally by Dr. A. S. Wheeler, is perhaps as perfect as exists anywhere in the United States. It provides that all animals killed locally for food shall be inspected and the meat is stamped. Moreover, all dressed meat brought into the city must be stamped in a similar way. And it is unlawful for any butcher to sell meat that does not bear the stamp of the meat inspector. In Montgomery, all meat-producing animals are killed in a central slaughter-house under the supervision of a meat inspector. These systems, and all that are followed in European countries, place the responsibility of deciding whether a given carcass is suitable for food upon an inspector who is trained in animal pathology.

In some other cities, as Philadelphia, the meat inspection system is based upon an entirely different principle. There are laws prohibiting the sale of diseased or unwholesome meat, and it is assumed that the butcher is always competent to determine this point. Under this system detectives or police officers are appointed to visit slaughter-houses, markets and butcher shops, hunt for diseased or unwholesome meat, which is condemned by a veterinary adviser called in by them, and the seller is often prosecuted. It is scarcely necessary to say that this system is undesirable: First, because it does not include an inspection of all meat sold and inevitably permits the consumption of much that is injurious, and, second, because it assumes knowledge on the part of the butcher that he cannot possibly possess and makes him responsible for conditions that he cannot recognize. The system is therefore incomplete and as a permanent system it is unjust. Its chief advantage lies in the fact that it tends to make butchers more careful, so that gross pathological conditions do not reach their stalls, and a portion of the diseased meat that would otherwise be placed upon the market is barred. However, such a system constitutes a beginning in the right direction, but no municipality should be satisfied with it, if a better can be obtained.

Municipal meat inspection is of more importance in the East than in the West, because tuberculosis is more prevalent in this region, and a great many worn-out dairy cows are sent to the shambles. Many of these cattle are afflicted with tuberculosis and other chronic ailments. They are frequently emaciated and constitute the most dangerous class of beef animals. Philadelphia is situated in the midst of a bountiful dairy district and is a large consumer of these animals. They are not killed in a large central abattoir under constant supervision, but in numerous little slaughter-houses scattered throughout the city and its suburbs. There are about one hundred slaughter-houses in Philadelphia. Many of them are quite small, situated on back streets, surrounded by stables and dwelling houses. In these establishments cattle are frequently killed at night or very early in the morning, and are not inspected at all. Occasionally, and as often as possible, the inspector drops in while the carcasses are being dressed, and his vigilance is rewarded almost daily by the discovery of a diseased and dangerous animal. The business of these slaughter-houses is conducted so irregularly that it is not possible to properly control them without having almost as many meat inspectors as slaughter-houses, and if the force were enlarged to these dimensions the sanitary conditions and the surroundings of the slaughter-houses would still be such as to seriously injure the wholesomeness and keeping qualities of much of the meat dressed in them.

A further reason for a better system of meat inspection here is that there is a constant and growing demand for many parts of carcasses which are more frequently diseased than the flesh, and were formerly thrown away. Our ever-increasing foreign population consumes viscera for which there was no market a few years ago, and meat inspectors frequently find that such organs are diseased to an extent that renders them unwholesome, while the rest of the carcass can safely be sold. As a result of the fact that inspectors are not constantly present, a great many diseased carcasses are unquestionably sold and frequently without the knowledge of the butcher who handles them. His training is not sufficient to enable him to detect important symptoms and lesions. In some cases, however, he does detect them and remove them so thoroughly that the suspicions of the meat inspector are not aroused.

The conditions that prevail in Philadelphia are not unique. They exist in almost every city in this country, and it is largely on account of the multiplicity of slaughter-houses that thorough systems of meat inspections have not been more generally established. An adequate control of the meat supply of Philadelphia cannot be enforced without a great extension of the present force, or a concentration of the business of slaughtering. The latter plan is supported by the experience of all of the older civilized countries, and is to be recommended not only because it would facilitate the inspection of meat, but for several other reasons as well. It would do away with all of the small, poorly equipped, badly managed slaughter-houses which are in many cases nuisances in their respective neighborhoods. It would make it unnecessary to drive cattle through the streets, a practice that blocks traffic, frightens people and at times occasions serious accidents. It would give small butchers the advantages enjoyed by wholesalers; they could use the facilities of the large slaughter-house, which are immeasurably superior to their individual establishments, and the cold storage system could be used by all with economy to the dealer, and advantage, and increased wholesomeness of the meat, to the consumer. The offal and the condemned organs and carcasses could be disposed of to better advantage. Local meat would gain in reputation, if such a system were enforced, and trade could be built up on its merits and competition with Western beef would be less difficult.

Moreover, it has been shown by repeated trials of this system that instead of increasing the cost of meat it tends to reduce it.

A large establishment can be conducted by coöperation between butchers at less expense than when each has his own establishment. In Europe such union or central abattoirs are owned by municipalities, and undoubtedly this is the most desirable system, because under it all butchers are assured equal rights and privileges. It has been found that the rentals derived from these establishments are sufficient not only to pay the running expenses, but to afford a reasonable return for the investment. The whole system is not only of great advantage to the consumer of meats, but it subjects butchers to no hardship whatever, and makes it more convenient and cheaper for them to conduct their trade.

MILK INSPECTION.

By James Henderson, M. R. C. V. S., Chicago, Ill.

Read at the Meeting of the Illinois State Veterinary Medical Association and the Chicago Veterinary Society, at the Sherman House, Chicago, Nov. 3, 1897.

Mr. Chairman and Gentlemen:

In accordance with the invitation of our President, the following remarks will refer to the subject of milk inspection.

The objects aimed at by milk inspection are:

1.—To secure to the consumer a fair and uniform standard of quality.

2.—To secure the consumer against diseases which may be transmitted to them by the medium of milk.

In this city there exists a system of inspection carried out by an organized staff of officers to secure to the public a good and uniform standard of quality. This form of inspection is, I believe, well administered. Still, there is one just ground for criticism here. I refer to milk obtained by feeding brewer's grains and other waste products of distilleries and vinegar factories.

It seems that by feeding this slop milk can be obtained which will reach the necessary standard of quality. The following passage on the subject appears in the annual "Report of the St. Louis Milk Inspector, 1896:"

"Of the milk producing property of such food there appears to be little doubt, and as producers of quantity alone our dairymen have the weight of evidence in their favor. Authorities, however, who have more thoroughly investigated this subject assert that the quality of the milk produced under such feeding is less stable in its constituents, the fat more readily broken up into the various fatty acids, the casein less soluble, the whole product more liable to the various forms of decomposition, and less valuable as a nutrient than milk produced by healthy animals under natural environments. Such milk cannot be used by the manufacturers of condensed milk, and in their contracts with producers of raw milk specially stipulate that the cows should not be fed upon it in any quantity whatever."

I venture to think that the sale of such milk should be stopped. It is an injustice to citizens to have such products foisted upon them simply because such slops are cheap.

This form of inspection is too purely mechanical and chemical to sustain our interest, so we will pass to the second subject of inspection, namely, the securing the consumer from infectious diseases transmitted by milk, in which we as veterinarians are more directly interested. Such infections may be very naturally classified as those which are primary and those which are secondary.

The infection may be said to be primary when the milk acquires the virus directly from the cow while she is suffering from some specific disease which is transmissible to man, such as anthrax, foot-and-mouth disease, tuberculosis, etc.

Secondary infection occurs when disease is imparted into milk which is otherwise healthy by outside causes, as, for instance, by washing milk utensils with disease-contaminated water or the absorption of the volatile virus of disease from which one of the employees may be suffering. To such causes may be traced many outbreaks of such diseases as scarlet fever, typhoid, diphtheria and even cholera. The report already quoted from gives a list of outbreaks of these and similar diseases in different parts of the world which were directly traceable to the dairies where employees or members of the dairyman's family were affected by these diseases.

As far as I am aware nothing has ever been done in this country to combat this peril to the community by specific inspection. In Edinburgh, Scotland, however, this form of inspection has been partially established. An outline of its methods may offer some valuable suggestions for us. In that city a special health officer has charge of the inspection. Whenever it shall be certified by this medical officer of health that an outbreak of infectious disease is, in his opinion, attributable to the milk supply, the dealers whose milk is suspected are ordered by the city authorities to render them a complete list of their customers with their addresses.

The dealers in question are also obliged to give the names and addresses of all the farmers and dairymen from whom they buy their milk. By means of the list of the consumers the progress of the disease is noted as to location among these customers, and the offending dealer or dealers are thus traced out. By means of the list of dairymen supplying these dealers, the offending *dairy* is traced out. At such dairy it is usually found that some employee or member of the dairyman's family is suffering from the disease in question. The sale of milk produced at this place is prohibited, and this prohibition is maintained until the affected person is removed from the premises, and until disinfection has been enforced to the satisfaction of the said health officer. After these measures have been taken, the sale of milk may be resumed. This is a mere outline of the regulations, but when their salient points are considered the plan is very practical if it is a little cumbrous. In order to get into more immediate touch with the producers whose milk may be contaminated in this way, it would be necessary to have all milk producers licensed, and a provision made which would force them under severe penalties to report all suspicious cases of illness among the operatives of the establishment to a properly constituted medical inspector. Even this plan has its serious disadvantages, for if the disease so reported should be an infectious one it would inflict a great though temporary loss upon the producer, and it does not take a very deep insight into human nature to see that the producers, or many of them at least, would resort to every subterfuge in order to avoid making such a report.

The alternate plan to the above one is, to have these licensed dairies visited every week by an appointed health officer, whose duty it would be to report and to act upon such cases. It might be possible to enforce both of these plans of inspection at one and the same time.

The above remarks, let me remind you, refer to inspection as applied to *secondary* affection. We will now return to the consideration of inspection as applied to *primary* infection of milk. If you will pardon the repetition, I will restate that primary infection means the transmission to man through the vehicle of milk of diseases which are common both to man and the lower animals. Of all the primary infections beyond comparison tuberculosis transcends the others in importance because it is so common and so deadly. It is estimated that about 14 per cent. of our population die of this disease. A study of the results of tubercular tests will show that about the same proportion of cows are similarly affected. The saddest part of this record of fatality is the fact that out of the 14 per cent. of human deaths from this cause a relatively large proportion of them are infants.

In children this disease for the most part takes the form of tabies mesenterica, and this alone, if no other evidence existed, is enough to point to milk as a source of infection. Microscopic examination of milk with a view to demonstrating the existence of the bacillus tuberculosis in it is quite impracticable because of the amount of their dilution. But their presence in affected milk has often been demonstrated by the injection of it into the subcutaneous tissue or into the peritoneum of guinea-pigs and other susceptible animals. When the milk is drawn from affected udders for such injection, the disease is reproduced in these animals nearly every time. Authorities differ regarding the nocuity of milk drawn from admittedly tuberculous cows but whose udders are not invaded by the disease. Some scientists by injecting such milk into experimental animals have had positive results, but in most cases the results have been negative. The fact that a proportion of these experiments show positive results, together with the fact that milk taken from affected udders give positive results almost invariably, furnish an indisputable basis for the conclusion that the average milk supply contains sufficient tubercle bacilli or spores to infect susceptible human subjects. This being the case it is imperative that the body politic defend itself against this danger by a system of milk inspection. Fortunately for this purpose we have an unerring diagnostic agent in Koch's tuberculin. Of the known results of this test and of the method of its application I need say nothing here, they are already so well known.

In this State, up to the present time, the attempts to apply this test have been isolated, and inconclusive, simply because they have been unorganized. We are far behind some of our neighboring states. Of the Western States, Minnesota is far-in the lead, and as a city Minneapolis has attained a state of inspection that is close to ideal, at least in theory. As an incentive to our agitation for a similar arrangement in Chicago, I will, with your permission, read some passages from Bulletin No. 51 of the Agricultural Experiment Station of Minnesota.

Page 350. "Minneapolis has taken a creditable stand in this matter. The city furnishes tuberculin free and a competent veterinarian to do the work. No man can legally sell milk without a license, and a certificate of tuberculin test must be presented before a license may be granted. All cattle tested are tagged and numbered, both those that react and those that do not. Record is kept of these numbers and the disposition of the cattle is tested and numbered.

"The general law and the city ordinance which provides for the inspection of dairies, dairy herds, and the licensing of the same is so admirable that it is here given, with the suggestion that other cities shall go and do likewise. It will be noticed that the city does not order any cattle tested, but merely says if your cattle are not tested we cannot grant you license to sell.

"Section 1.—No person shall sell any milk within the city of Minneapolis without first having obtained a license so to do in the manner hereinafter provided."

In section 3, while providing for the dairyman's license, the following occurs:

"Upon the filing of such application with the Commissioner of Health for said city, as provided in the preceding section, the Commissioner of Health, or the veterinarian of the Department of Health, or an authorized inspector of said Department of Health, shall inspect the dairy and dairy herds of such applicant or the dairy and dairy herds of the person from whom such person obtains his milk for sale within said city, without unnecessary delay, and it shall be the duty of the Commissioner of Health to cause to be made by the veterinarian of the Department of Health, or under his direction and supervision, an examination of each and every animal producing milk for sale or consumption within said city or belonging to or controlled by said applicant or the person from whom said applicant obtains his milk, for detecting the presence or absence of tuberculosis, or any other contagious or infectious disease, and the said veterinarian of the Department of Health, in making such an inspection and examination is hereby authorized to use what is commonly known as the tuberculin test as a diagnostic agent for the detection of tuberculosis in such animal. After such examination and inspection of the dairies and dairy herds as hereinbefore provided, the Department of Health shall tag each and every animal so examined, which tag shall be of such a character as to afford a permanent record of such examination, and the result of the same as regards the presence or absence of an infectious or contagious disease."

These regulations here outlined are entirely praiseworthy, and Minneapolis is to be congratulated upon their passage through the city council. I have no information as to how these regulations have stood the test of being put into practice, but it is safe to conclude that the men who were shrewd enough to devise this scheme would not lack ability to put it into execution. Observe that this enterprising young city has a veterinarian of the Health Department. The creation of such an office is just what we want in this city. It would be his duty to enforce good laws, which already form part of the city code, but which remain a dead letter, because no one is appointed to enforce them. He would have under his care the horses belonging to the city fire and police departments. But, most important of all, he could organize a system of milk inspection which would practically eliminate tuberculous milk from the city's supply. Although Illinois is preëminently the State which should lead in such matters, it would be very much to her advantage if she would simply copy her Northwestern neighbor, at least so far as the tuberculin test is concerned. No system of milk inspection would be complete which did not protect the consumer against typhoid, diphtheria, etc., as well as against tubercle and other primary infections. The first is medical in its scope, the second is veterinary, but there is no good reason why they should not work in harmony. If the license to sell milk be made conditional upon possession of a certificate of veterinary inspection, nothing would be simpler than to make an additional certificate necessary proving that the premises from which the milk had come, had also been subjected to a medical inspection. The milk dealers might look upon this as the last straw that broke the camel's back, but if it were found necessary the benefited public might not be unwilling to pay a slightly advanced price for what would be a vastly improved product.

Let me remind you that the innocuous milk does not mean milk which is entirely free from bacteria. Many observers have proved that milk has, as Dr. Moore says, its "natural bacterial flora."

It appears that the milk first drawn from one quarter of a cow's udder contains about 90,000 bacteria to the c. c.

That of the middle milking contains 9000 per c. c., while that of the last milking may contain about 500 per c. c., or may be free of them altogether.

Dr. Moore in the 12th and 13th annual report of the Bureau of Animal Industry for 1895–96 summarizes their nature as follows:

"The bacteria which become localized in the milk ducts, and which are necessarily carried into the milk, are for the greater part rapidly acid-producing organisms, *i. e.*, they ferment milk sugar, forming acids. They do not produce gas. Bacillus coli communis and other gas producing bacteria sometimes found in the market milk are presumably the result of external contamination. The fact that sugar fermenting bacteria are ordinarily present in freshly drawn milk renders it necessary if its normal composition is to be retained, that it should be pasteurized as soon as possible after it is drawn. This is necessary, regardless of the cleanliness of the stable, milking utensils, and surroundings generally. Much of the reported intestinal troubles arising from feeding infants ordinarily pasteurized milk is undoubtedly due to the presence of acids produced before the pasteurization by sugar fermenting bacteria derived from the milk ducts. These germs in themselves are non-pathogenic. They are only nocuous, inasmuch as they decompose the solids of the milk. They have therefore only to be considered as regards the preservation of the milk. Their multiplication and specific action can be checked by rapidly cooling the milk to 40 or 50 Fahr., as soon as it is drawn, for the gradually cooling milk forms a medium that is very favorable to their vegetation. Unfortunately there is still another set of germs to be reckoned with. I refer to those which gain access to the milk after it is drawn from the cow. Most of these fall from the body of the cow into the milk during the act of milking. The others are those which infect cow sheds, milk utensils, and milk houses habitually. Their action may be summarized under these heads:

"1. Those which make milk, and still more cream, ropy or stringy.

"2. Those which produce gases in the milk, the gases appearing as bubbles on the surface.

"3. Those which cause a change of color in the milk, the commonest tints being red and blue."

Complete avoidance of this species of contamination is difficult to attain, yet it is more easily avoided than either of the others, that is the disease germs and the germs native to the milk. The most rigid insistence upon cleanliness and constant disinfection will do much to remedy this evil. An excellent set of rules bearing on this subject are set forth in Bulletin No. 3 on "Milk," by A. G. McClatchie, of the Agricultural Experiment Station, Los Angeles, dated Aug., 1897. Time will not permit of their insertion in this paper.

This completes the long list of microbic milk contaminations. Milk is the most extensively infected of all our common foods. The reason of this is that it forms such an excellent medium for the multiplication and preservation of microbes. They find nourishment in it just as we do. The problem now before us is, how to free the milk from bacteria and their spores, and at the same time conserve its nourishing and easily assimilative properties. In the first place the animal heat must be got rid of at once. Keeping the milk in motion retards microbic germination, and rapid lowering of the temperature to 40 or 50 Fahr., will check it, but will not affect the spores. The most perfect device for this purpose would be one by which the milk was kept running over an ice cold surface until that temperature was reached. This, of course, should be done as soon as possible after the milk is drawn from the cow. All the mischief possible would be done by postponing it for six hours. Treatment of milk to this extent is about all that could be accomplished at the average dairy. For subsequent treatment the methods in force at the milk laboratories of Nathan Straus in New York are very effective.

As soon as the milk arrives at his depot its temperature is reduced to 50 Fahr. It is then run through a Laval separator, which throws out all the dirt, animal cells, and mucous held in suspension.

These impurities are then removed and the milk and cream are mixed together again. The milk is then bottled and pasteurized by exposure to heat, the temperature being 75 C. or 167 Fahr. The milk is then rapidly cooled and kept cool until distribution. This method of preparing an improved quality of milk is very good as far as it goes, and incidentally let us pay our tribute of admiration to this genuine philanthropist, who, at a financial loss to himself, supplied this milk to the poor of certain districts about New York at a very low price. This method of treatment is probably the best of its kind that has been operated on a large scale, and may be considered as typical of all others. It is open, however, to two important criticisms.

In the first place, heat at 167 Fahr. coagulates the albumen of the milk, and this very seriously interferes with its assimilation by infants. A well-founded prejudice against pasteurized milk is growing up among medical practitioners. A physician remarked to me the other day that a child may just as well die of tuberculosis as of indigestion. The other criticism of the method is, that pasteurized milk is not sterile, although its keeping qualities are immensely improved. The microbes that are in the vegetative stage are killed by this process, but the spores, which are the latent or seed stage of them, can withstand the exposure to this heat (167 Fahr.) for the few minutes it takes to pasteurize milk, without being injured. The presence of these spores makes it necessary to reduce the temperature again rapidly so that as few of them may be allowed to germinate as possible. It thus appears that pasteurization as at present operated does not succeed in conserving the natural assimilative properties of raw milk, because the high temperature used imparts a cooked taste and coagulates the albumen. It also fails to produce sterilization. The difficulty is to find a temperature low enough to avoid these chemical changes and yet high enough to produce sterilization. The microbes which present the most difficulty on account of their vitality are the bacilli and spores of tuberculosis and the spores of the microbes producing souring in milk. Mr. Russel, of the Wisconsin Agricultural Experiment Station, strikes the key-note of the new treatment in his milk Bulletin No. 44.

He writes: "It is possible, however, by the *intermittent* application of heat at successive intervals either at a comparatively low temperature, say 140 Fahr., or higher, to kill out completely *all* living germs either in a latent or in a growing condition. This method can be used with milk, but it would enhance the cost of preparation so much that it is not applicable to its preservation under ordinary conditions."

The first of these successive heatings would kill all the vegetative germs, leaving only the spores. If the milk be allowed gradually to cool, these spores will find a temperature at which they will germinate and assume the vegetative stage. The spores would be then turned into bacilli, and a second heating will kill them. To make sure that no spores remain after this treatment, a third heating is made, which leaves the milk absolutely sterile. Of the two offending bacilli that of tuberculosis is by far the most important. Mr. Russel further states that it is killed by exposing it to 149 Fahr. for thirty minutes, so it is easy to determine a thermo death point *below* that at which the chemical changes take place. This method of treating milk is the most perfect yet discovered, but it is unfortunate that it is so costly. Still, the application of it is a matter of such supreme importance to the public health that if the highest mechanical skill were employed the expense of it might be reduced so as to bring the product within the reach of all. The greatest barrier is the length of time necessary for the operation.

In conclusion I will again quote from Mr. Russel:

"It should be constantly kept in mind that the pasteurizing process is no cure-all for dirty and filthy conditions, and does not put a premium upon slovenliness. It is a mistaken idea that one can take tainted, half-soured milk, and by pasteurizing it, preserve it for a long period of time. The best results with the pasteurized products will be secured by those who take the greatest pains in securing the very best milk they can get. If we have first-class raw material to work with, by care and patience, no trouble will be experienced in getting a product that will be satisfactory under the most critical tests."

A CONTRIBUTION TO THE SYMPTOMATOLOGY OF RUPTURE OF THE DIAPHRAGM.

By W. A. Heck, D. V. M., Kansas City, Mo.

A Paper read before the Missouri Valley Veterinary Medical Association.

In February of this year my attention was called to a ten-year-old bay mare, about sixteen hands, one of a team used on a coal wagon. She was thin in flesh, hair looked bad and she showed every indication of chronic indigestion. Owner said he thought her teeth were bad as she did not eat hay well.

Upon examination a supernumerary molar tooth was found growing by the side of the second left inferior; this tooth was leaning out at an angle of about forty-five degrees and was irritating the membrane of the cheek, and seriously interfering with mastication. This was a solution of the indigestion from which she was suffering. The tooth was removed and found to be normal in size and length and perfectly sound; its mate seemed to be sound and full size. After the tooth was removed treatment was given for indigestion, and the patient in a few days was doing well. This I considered was a very interesting case, as supernumerary molars are rather rare.

On the morning of March 10th, the owner found the mare sick in the barn. During the night she had kicked out the plank partition in the stall and was found lying upon her side. She did not roll nor make any great disturbance, so the owner did not see anything alarming in her condition. He gave her a pint of linseed oil and went about his business. Accidentally meeting me about ten o'clock he asked me to drive around by the barn and see if there was anything serious troubling her. Upon arriving at the barn found her lying in the garden lot in the mud. She was plastered over with mud and water and was a very muddy animal. She was gotten up and let into the barn, where the following symptoms were noted:

Pulse 60, respirations regular but somewhat accelerated, lying down, stretching at full length upon the floor, no attempt to roll. After lying four or five minutes she would make an effort to rise, but would stop with her legs in a flexed position, lying directly upon her sternum, and remain in this peculiar position for some time, pointing with her nose to either side directly behind the forelegs rather than the flank. The pain did not seem to be acute, although she bore a very anxious expression. The ears were drooping. Remembering the attack of indigestion which had previously troubled her, I did not hesitate to diagnose the case as colic, and prescribed another pint of oil and gave her a hypodermic injection of four grains of morphine.

I thought she would be better soon, but left instructions to call me if she did not get along. At noon, March 11th, was notified that the mare was still in the same condition. Arrived at one o'clock, found the patient showing the same symptoms as the previous day—very little change. No movement of the bowels since she had been sick. Owner at noon had given one pound of magnesium sulphate in a drench. I now realized that we had a very grave case on hand. As she was dry and in a more fit condition to examine than on the previous day she was given a careful going over. Her pulse was 60° and strong; respirations normal in frequency; inspiration deep, expiration difficult, making her breathe very much like a horse suffering from "heaves." Upon lying down it was noticed that she would nearly always lie upon the left side. She had that peculiar way of placing her knees, lopping her ears, pointing her nose and assuming the attitude which was so conspicuous the day before. Her pain was constant rather than intermittent, temperature 102.5.

Examined per rectum and found that organ empty, but high up in the bowel was felt a hard mass, which at first I thought to be a tumor, but upon closer examination concluded was fæcal matter in the large colon.

Upon auscultation of the abdomen it was discovered that peristalsis was absent. My diagnosis now was impaction of some part of the digestive tract, for which she was given treatment. March 12th, 12 M., found the mare in the garden lying in the mud; the owner informed me that he could not keep her in the barn, that she would break out in spite of his efforts to the contrary and would select the muddiest places in which to lie. The same symptoms were manifested as on the days previous. She would not eat nor drink, there was no passage of fæces, no tympany, no peristalsis. The animal was growing weaker. Pronounced the case hopeless and ordered no additional treatment.

Found dead on the morning of March 13th. Post-mortem at ten o'clock by Dr. Robert Robb and myself. Opened the mare on the left side and found laceration of the right pillar of the diaphragm close to its tendonous attachment. There was no laceration of the muscular or aponeurotic portions of the diaphragm proper. About the laceration there was serious extravasation and extensive inflammatory changes. The omentum, bowels, and contiguous tissues showed evidences of inflammatory invasion. All the other organs normal. Stomach and small intestines empty. The mass which had been felt upon rectal examination proved to be fæcal matter in the large colon, which was partially filled and seemed dry and hard.

This case was interesting from the fact that such conditions are so rarely seen; only a few cases of laceration of the diaphragm, as a primary affection, are on record and I have not been able to find a single case where the laceration was confined to the pillars.

From the post-mortem lesions it leaves no question of doubt that the laceration occurred before the sickness of the animal. The occurrence was probably on March 9th, as she was used that day upon a heavy coal wagon over a slippery road, and it is reasonable to suppose that the laceration occurred during a heavy pull.

If the symptoms manifested in this case are characteristic of diaphragmatic lacerations it would be very easy indeed to diagnose most of them. The lying down and making no effort to roll, pointing with nose over the affected region, constant pain, absence of tympany throughout the sickness, regular but deep respiration, the lying upon the sternum, with flexed knees —not sitting dog-fashion as is often seen in acute indigestion and rupture of the stomach,—the anxious expression, the lopping ears, the disposition to lie in a cool place are all symptoms I have never witnessed in any other disease to such a marked degree.

Authors in treating of rupture of the diaphragm speak of patients pawing, rapid respiration, sweating in the region of the diaphragm as being the diagnostic symptoms, all of which were absent in this case.

REPORT OF TWO SURGICAL CASES.

TENOTOMY AND RESECTION OF NECROTIC PARTS OF THE SOFT TISSUES OF THE FROG CAUSED BY A NAIL.

By Dr. Otto G. Noack, Reading, Pa.

A Paper read before the meeting of the Pennsylvania State Veterinary Medical Association, at Franklin, Pa., Sept., 1897.

On December 3, 1896, I was called to see a bay horse, 12 years old, 16 hands. The owner, Mr. Fry, reported to me the horse had had to pull a very heavy load about six months ago and had limped ever since. By and by the leg shortened and he began to walk on the toe, then getting worse, being unable to walk at all. Upon examination I found excessive volar flexion of the left front hoof in the crown joint caused by contraction of the flexor perforans, in the region between the first and second third of the metacarpus; there could be noticed a thickening in form of a hard and sharp defined swelling. My diagnosis was chronic tendinitis.

I informed the owner that the prognosis was not very favorable and the only treatment to be applied was tenotomy and explained to him how it had to be done. At first he was doubtful, but as the horse in the condition he was in was worthless to him, he consented. As the general practitioner has not much time to lose and the operations have to be made with little assistance, it is an impossibility to go according to rules and one has to be guided by circumstances. I disinfected at first the leg as well as was possible under the circumstances, injected right above the thickening 5 grammes of a 10 per cent. solution of cocaine, and putting the twitch to the horse's upper lip I made an incision through the skin with a pointed bistoury right at the swelling on the outside. After this I inserted a blunt tenotome with its surface lying close to the tendon till I felt it on the inside and turned the knife against the tendon and cutting it slowly, the hoof came down suddenly with a loud noise before the tendon was completely cut through and the horse could stand on his foot. Profuse bleeding showed that blood vessels had permeated already the thickening. After cleansing with a solution of creolin I applied an aseptic bandage. Two days afterwards I opened the bandage and found that suppuration had set in, perhaps by some hair or another foreign body that had gained access during the operation. The wound was cleaned every other day with creolin. After the third day of operation the horse got daily exercise for about ten minutes for three weeks. In this time the wound had healed and the horse showed by walking on the old shoes a very bad plantar flexion. To avoid this I gave the horse a shoe without calkins, but thickened heels, the toe cut very short with rolling motion, and by this I overcame the plantar flexion. The horse was put to work two weeks later and is working ever since.

In the middle of January, 1897, I had to attend a horse which had tread on a nail some time before, and the wound did not appear to heal, connected with great pain and caused the horse to walk very lame. I cut some horn around the wound away and recommended to soak the horse's foot in a bath of creolin. Four weeks later I was called in again with the remark that the wound had healed, but the horse still remained lame. I recommended blistering around the coronary band, which was done, but without success. I then told the owner, Mr. Chas. Miller, the only thing that could be done was to operate, as there must be a lesion of the bone with suppuration or necrotic parts of the tissues where the nail went through, but it being doubtful, the operation would be of avail. After two months consideration I was informed to operate upon the horse as the horse in the condition he was in was worthless. On June 6th I performed the operation. After casting the horse I pared the inner part of the frog till the plantar cushion was reached and found the sore left by the nail, showing a black spot, reaching into the plantar cushion nearly ¾ of an inch of the same dark color. I removed the diseased parts and applied an aseptic bandage and during four weeks I only changed the dressing 4 or 5 times, the wound healing without any suppuration whatever. The horse was put to work without showing any lameness.

A RAPID METHOD OF EMPTYING THE STOMACH IN CASE OF POISONING.

By J. H. Blattenberg, V. S., Lima, Ohio.

We all know the difficulty of thoroughly emptying the stomach of a dog or cat with any drug causing vomition, when we have a subject of acute poisoning from nux vomica or strychnine on account of the severe clonic spasms in which we find our patient.

I have been very successful in saving many a good dog and occasionally a pet tabby that strayed upon the door yard of some heartless individual who, with diabolical purpose, had laid a poisoned bait for unsuspecting and trespassing "Fido."

I immediately order a gallon or two of warm water, which is usually at hand wherever one is called. If it be a large dog I use my large injection pump; if it be a cat or small dog, then a common small bulb rectal syringe is used, inserting the nozzle in the rectum, grasp the sphincter ani with fingers and have an attendant or sympathetic bystander pump the water with steady pressure. In 40 seconds to 1 minute I have forced water completely through the alimentary canal and thoroughly washed out the stomach, causing two or three vomitions before relaxing hold on sphincter, thus having gotten rid of all poison except what remains from absorption. I then give chloral hydrate hypodermically, according to size of patient.

When desiring immediate vomition in small animals, I have been using this mode of procedure for several years, having given a dog an extra large enema with above results. Experimenting upon dogs and cats has proven it to be void of danger to patient.

REPORTS OF CASES.

"*Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science.*"

INTUSSUSCEPTION OF SMALL INTESTINE OF COLT—OPERATION—RECOVERY.

By Dr. E. MAYHEW MICHENER, Veterinarian, University of Pennsylvania, Class of 1890.

On October 11, 1897, a colt, aged three months, property of Cloverdell Farm, Colmar, was noticed at 6 A. M. to have colicky pains, and ordinary remedies were given without relief. I saw the colt for the first time at noon of the same day, and found it in great pain, constantly up and down and taking the dorsal position when down.

My diagnosis was some obstruction of bowels, probably intussusception or volvulus of small intestine. Prognosis, grave.

Operation was accordingly advised, as affording the only hope. The owner considered the matter until 4 P. M., when he decided to let me operate, and sent in great haste.

On arriving at the farm again about 6 P. M., I at once prepared and arranged an electric light, chloroformed the colt scrubbed whole under surface of the abdomen with hot water and soap and sponged off with hydrargyrum bichloride, 1-1000. The animal was laid on a clean sheet and opened by a median incision of the abdomen seven inches in extent, in front of the umbilicus. The small intestine was secured and pulled over half of its length through the opening and laid on the abdomen between the hind legs. The cause of the trouble was now revealed—an intussusception two feet three inches in length.

The bowel was very much swollen and leather-like to the touch and exceedingly weighty. By letting assistant (with clean hands) pull steadily and carefully at the bowel, while I pushed at the opposite end of the obstruction, I succeeded in righting the trouble. As the gut slipped into position there was a considerable quantity of nearly colorless liquid liberated, which had transfused to the space between the two peritoneal surfaces. About one foot of the imprisoned gut was dark blue to almost black in color and very suggestive of gangrene. After stroking the dark part with the hand for a minute or two to promote circulation, the intestines were returned to abdomen and wound closed by three lines of sutures, row of continuous for peritoneum, one row for recti muscles and tunica abdominis, one row for skin, waxed linen thread being employed, this being the only material at hand. The abdomen was sponged with bichloride and the anæsthetic removed. Time about twenty minutes.

The colt soon recovered from the chloroform and nursed in less than thirty minutes from finish of operation. Temperature before operation 103.5-6, one hour after operation 104½. The colt passed a very good night, standing most of the time, but occasionally down and resting easily. Nursed frequently, and drank a small quantity of water at short intervals.

October 12th, temperature 104½, slight diarrhœa. Peristaltic movements energetic, causing a loud rumbling sound; otherwise doing very well.

October 13th, temperature 104, bowels still active, but fæces more solid and covered with some tough mucous. Improved in appetite and general appearance. Wound doing nicely.

From this time on the temperature dropped slowly to normal. On the ninth day the stitches in the skin were removed to keep them from cutting. The wound in the skin gaped a little.

Suture of recti muscles and peritoneum removed on the thirteenth day, showing complete union.

There now (November 2, 1897,) remains only a slight wound, rapidly healing. The animal is lively and well.

A POST-MORTEM EXAMINATION WELL WORTH THE TROUBLE.

By C. Henry Doepel, D. V. S., Mamaroneck, N. Y.

On Sunday, November 14th, I was called at 7 P. M. to see a patient who, I was told, could not make water. I reached him at 7.30, and found as follows: A brown gelding, seven years old, had been brought from New York City, November 1, 1897. Since that time had light work and was fed about two quarts of oats and one quart bran three times daily; was an exceptionally bright, free driver, and showed no illness whatever until the present time.

The owner, Mr. T., had driven him in the afternoon, and noticed that he did not care to eat when he fed him at six o'clock, and immediately began to roll and kick. I was then sent for, and that was the history of the case as I got it.

The patient at this time was very uneasy, lying down and getting up continually, almost constantly making strenuous efforts to defecate and urinate; no flatulence in the usual place, but great quantities of gas, eructations from the stomach, and pronounced dyspnœa. Temperature 101° F. I gave at once

℞	Chloral hydrate,	25.
	Spts. ammon. arom.,	50.
	Sod. bicarb.,	15.
	Aqua,	q. s.
Fiat haustus		

following this drench with two pills of carbo-ligni., hoping to absorb the gas which was in the stomach. After administering drench and pills, I gave an enema of warm soapsuds, with no result, as the rectum was quite empty, and to satisfy the owner (who still insisted that "it was his water that bothered him"), I used the catheter, taking about one-half pint of urine. These operations did not relieve his distress, as he still continued to strain every few minutes.

In about one-half hour he was fairly quiet, and I was about preparing to leave, when the symptoms suddenly changed. He stood still in one spot, and trembled violently, his whole body shook, so much so that the vibration could be plainly felt on the floor; perspiration pouring from every pore in a stream;

dyspnœa very marked; countenance anxious and eyes staring. He exhibited all the symptoms of aconite poisoning, except that he did not salivate. I questioned the owner sharply, but he said positively the horse had received no medicine whatever.

For the time being, I became a disciple of Hahnemann (*similia similibus curantur*), and gave tinc. aconite rad., 1.5, repeating the dose in fifteen minutes. This afforded him relief, so that at 9.30 P. M. I left, with instructions that if he again became restless to give him sod. bicarb., apply mustard to the abdomen, and call me up, as I was within walking distance.

When I called Monday morning, I found my patient of the night previous in the field, ready for burial, the owner telling me that he died at 1 o'clock A. M. Had no further pain after I left, and died very quietly. At noon of the same day I held a post-mortem.

On opening the abdomen I found pieces of grass and particles of ingesta adhering to the viscera and abdominal walls; the intestines were very nearly normal in appearance. Here and there along their course could be seen very small inflammatory patches. The abdomen contained five gallons of fluid, which seemed to be only water slightly tinged with blood. The great omentum was so mixed up and wrapped around about one peck of masticated oats and hay, that it could be with difficulty separated and withdrawn from the mass. On removing the stomach, the cause of all the trouble was found; it was ruptured very nearly the whole extent of its greater curvature, the rent extending from one inch from the cardiac opening to two inches of the pyloric ring. The edges of this wound were not fresh, a considerable blood clot adhering. I should judge from the appearance that it was at least twenty-four hours old.

My reason for reporting this case is because the symptoms were so different from what is usually seen in rupture of stomach. At no time during his illness did he sit on his haunches or lie on his back—two very diagnostic symptoms that I have seen; and the absence of pain, I mean such pain as would be expected with such a lesion.

IS IT HOG CHOLERA?

By J. A McCRANK, D. V. S., Plattsburgh, N. Y.

From time to time I have noticed in the columns of our veterinary journals that some practitioner gave the history of some case, new to him, that came under his notice, in his practice. He asked for information on the matter from older practitioners or from those who possibly were more intimate with the trouble. Now, this young man looks on the journals as I do—the only medium which veterinarians have at hand to connect them with the whole veterinary community. I have repeatedly noticed that no one volunteered to help our young friend, no one seemed to take up the subject. Why? Are we afraid to wound his feelings by telling wherein he erred? Are all veterinarians as ignorant as he who asked for help? or is it indifference? I hope this will not be the way you treat my request. Censure me if you will for my ignorance, pity me for my stupidity, but help me in my troubles. I hope you will not look at my cases as too trival for your consideration. As a brother professional it is your duty to help me.

For a few years I have had trouble with the hogs of my vicinity; many of my clients have lost great numbers. I have worked on the cases steadily, getting what I think a complete set of symptoms. I have invited aid where I could get it.

The disease breaks out only where there are large herds. At first I thought the village swill was the cause, on account of dish washings being carried home, and this often contains soap. I tried to prevent the people from using the village swill, but such numbers were kept because the village refuse could be had, and it was impossible to do without it. We then tried to keep soaps from being used; this had a marked effect on the animals, but soon they returned to their sickly condition.

We found that when the hotel proprietors would not buy soaps for the kitchen help they bought "Pearline," "1776," etc., for themselves. Now, we left the village and got swill from the boats of the lake. This had a marked effect for awhile, imaginary or otherwise. I believe the soaps had something to do with increasing the severity of the disease, but I had a herd which never got village slops at all. They were fed on the offal from slaughter-houses. Yet they died in great numbers. Another herd owned by a baker never got slops, only from the house, and old or sour bread; yet they were carried away in great numbers; and I have eventually come to the conclusion that hog cholera was the trouble.

Symptoms:—The animal falls away in appetite, which becomes irregular, the bowels are constipated, gait becomes unsteady with a swinging of the hind quarters. In a couple of days a profuse diarrhœa sets in, with a very disagreeable odor, black colored stools which cause pain in their discharge. The pig lies most of the time, and will not arise unless forced to do so; when he stands he is forced to put his nose to the ground to balance himself; the color of the skin changes, becoming darker, with bluish spots. Death ends the agony in from three to ten day.

Post-mortem:—Outwardly the body is very much emaciated; large spots about abdomen, ears, etc.; mucous membrane of the eye dark. On opening immediately after death a disagreeable odor meets the operator; a large amount of coffee-colored fluid is found in the abdominal cavity. The intestines contain very many ulcerated spots on the serous coat, and the mucous coat is very thick. The liver has lost that smooth, glistening tint; it is dark and dull in color, the surface is very irregular, and on cutting is friable, brittle and dry to the knife. The spleen is in much the same condition. The lung tissue is thickened at parts, and the glands of the body are very black.

Prognosis:—A very few cases recover, about three per cent., and they are immune from the disease, likewise their progeny, and we have many old sows kept for breeding purposes.

Treatment:—None. I made no effort to treat the animals. Partial paralysis exists from the very first symptom.

Now, friends, do any of you doubt me when I diagnose the disease to be hog cholera? If it is not cholera, then what is it?

Will any of you suggest a course of treatment? Don't spare my feelings.

CATTLE POISONING.

By J. A. McCrank, D. V. S., Plattsburgh, N. Y.

I have had some trouble with cattle in my district lately. The cow comes home in the evening from pasture in perfect condition, gives accustomed amount of milk, but next morning when we see her she is unable to rise without aid, unfit to stand when she is helped up; her supply of milk very much diminished, and in a few cases it is stringy. She will not eat, yet her nose is moist as if in health, her temperature below normal, pulse very weak and slow. She appears unconscious of her surroundings; she has a very profuse diarrhœa, of a slimy consistency.

In a few cases the animal, after lying paralyzed apparently, for when she falls there lies, whether on her abdomen or side. She appears as if unable to concentrate her forces to make an effort; she remains in this comatose condition for a few days, when I have had them become frantic; no fence nor door could hold her back; she may run wild over fields for an hour, when suddenly she comes to a stand, where she remains for hours, falling back into that state of coma, from which she fails to recover.

Diagnosis:—Vegetable poisoning.

Treatment:—I treat the symptoms, giving digitalis and liquor arsenicalis, three or four times per day, after a purgative of Epsom salts.

I have had very good results from this treatment when I get the case at the outset, but after four to five hours my success is marked by the great number of deaths.

I find this trouble exists in certain localities, many animals from the same pasture or neighboring pastures. I have had the animals removed with good results.

Again, veterinarians, am I right when I say those animals are poisoned by some herbage found in the pasture lands? Answer, if you please. I am using the veterinary columns for information.

PURPURA TREATED BY ANTISTREPTOCOCCUS SERUM.

By W. G. Hollingworth, D. V. S., Utica, N. Y.

I wish to report a case of purpura hæmorrhagia which occurred in a bay gelding that had just made a good recovery from pneumonia, but under very poor hygienic surroundings. One day the owner discovered some small swellings, but paid no attention to them until they were very large. The horse could not move, so he sent for me. The diagnosis being easy, I prescribed in the regular way. I told him that I had ordered some antitoxin, and, as soon as it arrived, would proceed with the new treatment. When I arrived at my office it was there. The next morning I made an early call, and was sick, so to speak. I found my patient in great agony, swelling all gone, and commencing to have fluid discharges from the bowels, mixed with some food. My opinion was asked and it was unfavorable. The owner said he would not give five cents for his life, but I made up my mind to try the serum. I first gave a hypodermic of morphine, then left a hypodermic syringe to be kept disinfected and to give 10 c. c. of the serum once in three hours till I came again. His temperature was 105°, pulse 96, respiration 36. I called at 5 P. M., and found my patient in not so much pain; continued the serum treatment, once in three hours, through the night, and left cannabis indica to relieve the pain. Next morning when I called my patient was better, almost free from pain, fæces fluid and slightly bloody; inclined to eat hay, but would not touch anything else; temperature 103°, pulse 50, respiration 20. Gave instructions to give the serum once in six hours. I called that night; temperature 100°, pulse 50, respiration 16; ready to eat bran mash; fæces in a better condition, inclined to be in balls and no blood; reduced the frequency of the serum doses to once in eight hours; everything progressing finely, swellings going away; commenced to give only 10 c. c. a day, when, on my next visit, I found swelling very much larger; not so well; increased to once in eight hours again. Next day they were smaller; kept this up for four days; then reduced to once in twelve hours for a few days, gradually falling off till he received only one a day. Kept this up for four days; then stopped to wait further developments. Everything going on finely; put my patient on tonics and he made a splendid recovery.

I hope others will try this serum treatment, and report. I am very much taken with the treatment. I have just received 200 c. c. more, to have on hand, so I will not have to wait for the next one. I would say that the horse received 340 c. c. all told.

VESICO-RECTAL FISTULA.

By J. D. STURM, V. S., Dana, Indiana.

On September 15th, a three-year-old mule came to my barn with a long standing case of impaction of the rectum. The anus and rectum were badly swollen, and from the enormous quantity of fæces lodged therein I judged that he had been constipated quite a while.

The owner of the mule said he had been running on blue grass pasture, which was very dry, owing to the long continued drought. I dislodged the fæces, and gave the mule the ordinary treatment. By the 20th the swelling on anus was all gone, so I gave the owner the necessary instructions as to his feed and care, and heard no more from him until September 30th. The owner called and said the mule was not urinating right, but was urinating through his rectum. I called and found the following conditions: The mule looked normal with the exception of above condition. He would strain as if urinating but pass nothing; then would arch his back and strain as if to evacuate, and expel the urine through the rectum, and would expel it as if one had given a warm-water injection. I made a rectal examination, but could not detect anything; found fæces about ten to fifteen inches anterior, without any urine on them; by that I knew the opening was from the urethra. I then passed the catheter, which was quite a task, there being a stricture just forward of the arch, but found no urine. I gave the mule a laxative and informed owner I would call the following day. I then returned to my office and proceeded to investigate the case. Finding nothing to enlighten me, I proceeded to use the catheter until October 4th. Finding at this time that I had not yet improved his condition, I procured a new catheter, as strong and stiff as possible, and put a ligature through the end of the catheter, and prepuce well up and left it there twelve hours. When I again called, found the urine passing naturally. I also used an astringent per rectum. On October 5th took catheter out, cleaned it, and put it back. On October 6th removed it again, and seeing it was irritating the urethra, I left it out until October 7th, on which date I found the animal urinating naturally. I did not give any more medicine, but watched the case from day to day. I saw him last October 20th, and found him completely recovered.

AMPUTATION OF PENIS IN TWENTY-THREE-YEAR-OLD GELDING.

By James M. Reed, V. S., Mattoon, Ill.

I very much enjoy the monthly visits of the American Veterinary Review, and consider it my duty, as well as that of every other progressive veterinarian, to contribute as far as possible such information as will be interesting and instructive to its many readers. As practitioners we know the difficulties met with and the great care and close observation required to make correct diagnoses and prognoses, the difficulties in controlling our patients, and satisfying our patrons from a business point of view. I shall endeavor to assist in the general dissemination of practical knowledge by sending in the report of a case which came under my observation. I notice that there are quite a large number of interesting cases reported in each issue of the Review on diseases and treatment in the domestic animals, and, being rather a close student of animals, I shall report the following case :

A bright bay gelding of trotting breed, about twenty-three years old, with paraphymosis of the penis, caused by a kick from another horse about nine months previously. There was no fever and no soreness to the touch nor upon pressure by the hand, but it had been inflamed and discharging a pussy fluid for six months from the time of injury, which had subsided and left the penis in a paraphymosed condition. On account of its size, it was impossible to retract the penis within the sheath, and it hung down to the length of eighteen inches beneath the belly, making it unsightly to view and difficult for the animal to travel.

After thoroughly sterilizing all the necessary instruments, and taking other antiseptic precautions, I proceeded to amputate the penis by casting the horse on his left side, and securing him so as to expose the inguinal region as in castration. A hard-rubber catheter was passed into the urethra to above the point of amputation, and an ecraseur was placed firmly around the penis above the diseased area to prevent hæmorrhage and also to serve as a means of holding the organ outside of the prepuce or sheath. Pulling back the skin, an incision was made in the skin around the penis, then making a clean incision through to the urethra, leaving the urethra protruding about one-half inch, having the arteries in plain view, which were tied with linen thread. The skin and urethra were then stitched together, the ecraseur removed from its position, the penis retracted within the sheath, and the animal was allowed to arise. He appeared to be a little nervous for a few minutes, but soon rallied and went to eating, after which he was taken to his stall, a distance of eight blocks, appearing as fresh as ever. The wound was dressed with a solution of carbolic acid, tincture of arnica, tincture of iodine, and glycerine, three times a day, after washing each time with formaldine.

I visited the patient on June 18th (two days after the operation), and found the temperature 105, respirations 45, pulse 50; some swelling, appetite good; apparently feeling sore, but looking bright. The wound had been bleeding some but not to excess.

June 20—temperature 102, pulse 72, respirations 31; swelling more extensive; looking bright; appetite good; black discharge from wound; dressing same as in the beginning.

June 24—temperature, respirations and pulse normal; appetite good; took out the stitches; swelling slightly subsiding; discharge of pus from wound.

July 2—pulse and respirations normal; temperature slightly elevated; posterior portion of the penis slightly swollen; bathed externally with linseed oil, 12 ounces; turpentine, 2 ounces, and ammonia water. 2 ounces, three times a day, washing off once a day with warm water, dressing wound same as in the beginning. Appetite good; looking bright from eyes; wound healing rapidly.

On July 13 I visited the patient and found him normal in every way, with wound completely healed. Discharged him sound and in good health.

To the readers of the REVIEW this narrative may not be of much interest, but to me the case is unique on account of the age of the patient and the comparatively little trouble experienced in recovering.

A DENTAL CYST AT THE BASE OF THE EAR.

By E. C. WALKER, V. S., Norway, Maine.

During the month of June, 1896, I was called by A. F. Andrews & Sons to examine a horse, one of a nice pair they had just purchased in the West, which seemed to me to be suffering from a fistula, the opening being near the butt of the ear. In operating for cure of the fistula I passed a director to ascertain the course of the fistula, and found it passed under the ligaments of the ear and came in contact with a bony prominence, which I removed with the forceps and found, to my surprise, that it was what I called a tooth. I respectfully submit the tooth, or what you may be pleased to call it, for your examination and shall be pleased to read your opinion in the next issue of THE REVIEW.

[The specimen referred to above is that of the contents of a dental cyst, not a very uncommon condition to be found at that location. They are fully described in Williams' "Veterinary Surgery," page 430, edition of 1886; also, Hinebauch's "Veterinary Dental Surgery," page 124. They have been found in almost all portions of the body—the sinuses of the head, the temporal and frontal bones, base of the ear, intermaxillary space, the lumbar region, testicles, ovaries and near the kidneys.—EDITOR.]

A PRINCELY GIFT.—The King of Sweden has set aside the sum of 2,200,000 kronen ($618,750) for the stamping out of tuberculosis. This sum was the gift of his subjects on his attaining the twenty-fifth year of his reign.—(*Central Zeitung.*)

TO IMPROVE PHILADELPHIA'S MEAT INSPECTION.

A PUBLIC MEETING BY THE WOMAN'S HEALTH PROTECTIVE ASSOCIATION—MANY PROMINENT VETERINARIANS ADDRESS THE MEETING.

(*From the Philadelphia Press, December 7, 1897.*)

A meeting of the Woman's Health Protective Association was held at the College of Physicians, Thirteenth and Locust Streets, last evening, in the interest of the important measure of municipal meat inspection and the need of a better system for Philadelphia. In view of this meeting a committee of the association, composed of Mrs. E. J. Bartol, Miss Josephine Pope, Mrs. Lizzie S. Decker and Mrs. Baird, visited several of the one hundred or more small slaughter houses that are scattered throughout the city. What they found was graphically told by Miss Pope last night, and for the consumers of meat it proved an extremely interesting story. Many of the women present almost became converts to vegetarianism on the spot.

Mrs. John Scribner, president of the association, opened the meeting. She referred to the magnificent work the women did last year in the matter of the bakeshops and declared that they have gone into the present grave matter with a determination not to rest nor leave any stone unturned until they see in Philadelphia a corps of meat inspectors that will make "bob" veal, tuberculous beef and trichinic pork rarer than the dodo.

A number of men ranking high as bacteriologists, as veterinarians and in medicine were present, and all spoke of the importance of the inspection of all the meat consumed in a great city like this, and the urgent need, if such a state of things were to be accomplished, of concentrating in one vast abattoir all the slaughtering done, when inspection might become a systematic and perfect thing.

These men were Dr. D. E. Salmon, chief of the Bureau of Animal Industry, of Washington, D. C.; Dr. A. W. Clement, State Veterinarian of Maryland; Dr. Benjamin Lee, Secretary of the State Board of Health; Dr. H. D. Gill, of the Health Department of New York City; Dr. George Strawbridge of the County Medical Society; Dr. Leonard Pearson, of the State Veterinary Sanitary Board; Dr. John W. Adams, consulting meat inspector of Philadelphia, and Dr. W. Horace Hoskins and Dr. Rush Huidekoper.

Dr. Salmon spoke first and described the methods of Federal inspections of meats for foreign and inter-State commerce. He referred to the dangers arising from the distribution of diseased foods, meat, especially, and expressed strongly his approval of the steps of the association.

Dr. Huidekoper said that it was a question which should be taken up at once and followed up with untiring zeal, as it is one of the greatest interest to the community—interest far greater than the community itself can realize.

Dr. Benjamin Lee spoke of trichinosis, the parasitic worm which infects pork when it is raised under unhealthy conditions, and, of the ease with which it is propagated in the human organism. He described the way the disease is acquired, by eating pork not sufficiently cooked and which was infected.

Dr. Clement, of Baltimore, spoke briefly on the conditions existing in that city, and which he said are not what they should be by any means. He deplored the absence of precaution in the matter, for he said that he found one and forty-seventh one-hundredth per cent. of the cattle handled by stock dealers and drovers to be infected with tuberculosis.

Dr. Gill spoke of the methods in New York City, where there are four meat inspectors and two fish inspectors, who found that 1,500,000 pounds of diseased meat and fish are annually shipped into that city. Ideal inspection does not exist, he said, and the only way to possibly cope with the matter is to have first a proper and efficient corps of scientists, a laboratory for them to work in, sufficient outside inspectors to do the field work, and, most important of all, the absolute exclusion of politics from the work.

Dr. George Strawbridge dealt with tuberculous cattle and the manner of the spread of that dire disease by meat and milk. The remedy, he suggested, was that suggested by all others, the centralization of the slaughter houses into one great abattoir, where the inspection could be thorough and easy.

Dr. Leonard Pearson described the methods of Berlin, Paris and other European cities where this plan is carried out, and where it is absolutely impossible for diseased meat to reach the dealer or the consumer. He gave a picture of the methods here, of the slaughter of the beasts and the subsequent dragging of the meat through dirty, dusty, germ-infected streets. That, he said, was enough in itself to make people pray for the early arrival of the centralized abattoir and the infliction of a penalty for the exposure for sale of meat that does not bear the hall-mark of the inspector and the tag of the inspectress.

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By W. V. Bieser, D. V. S., New York City.

Value of Neurectomy.—R. declares neurectomy to be of limited value, inasmuch as most patients become unfit for use after a year or so, according to his experience; the diseases for which the operation is indicated makes unhindered progress in spite of the cause. In such a case such pathological changes occurred at the crown of the hoof that the axis of the foot was entirely changed, the horse being only able to walk upon the outer edge of the hoof.—(*Berl. Thierärzt. Woch.*)

Fatal Panopthalmitis in the Horse.—Four weeks after an injury to the left eye, suppurative panopthalmitis set in, the patient thrust his head in a corner of the stall, or leaned it for support upon the manger; the animal was quite oblivious of his surroundings, becoming only momentarily conscious of being called; in such moments he took up a little fodder, only to let it fall, and then fell back into his original apathy again; respiration was deep and slow, pulse weak, the head very hot. Five weeks after the injury the animal suddenly shook his head, staggered and fell down dead. At the autopsy the right eye was normal, the optic disc of the left eye infiltrated, and into the nerve itself three large hæmorrhagic clots. The dura mater was markedly injected, the pia mater at the base was congested; the brain substance showed softening and glistened from moisture on section; the ventricles contained about a thimbleful of serum.—(*Berl. Thierärzt. Woch.*)

Tetanus Antitoxin in Tetanus [*Nocard*].—Nocard insists that however useful tetanus antitoxin may be as a preventive, it is not of the least value against tetanus itself. The failure of the remedy against the disease itself is due to the fact that the symptoms of tetanus appear only a long time after the absorption of the poison, at a time when the nerve cells have been irreparably damaged. Of what use is the injection of the antitoxin then? Upon Behring's asserting that he had an antitoxin that would cure tetanus already developed, N. decided to test the remedy. Calculating beforehand that a dose of 6 mg. would be the fatal dose of tetanus antitoxin for a horse, keeping in mind the fact that the first symptoms of tetanus develop in from five to seven but usually on the sixth day after the inoculation with the *toxin*, remembering furthermore that such horses always died, for the 6 mg. of toxin constituted the fatal dose, it was easy to substantiate or refute Behring's claim that his antitoxin could cure tetanus already developed. Of 33 animals receiving the fatal dose of tetanus toxin, and receiving Behring's curative dose (5 c. cm.) of *antitoxin*, receiving this dose moreover intravenously according to Behring's directions, upon the appearance of the first symptoms of tetanus, all died, the animals treated with antitoxin dying sometimes sooner than the animals, that received the fatal dose only, but no antitoxin at all. Whether the Pasteur or Behring antitoxin be used, after the first symptoms of tetanus once set in, the antitoxin cannot control the course of the disease. Nay, what is more to the point, even if the tetanus antitoxin be injected 24 hours previous to the onset of the first symptoms. Even if more than the curative dose be injected, even if it be injected into the jugular (which can easily be done before the incubating period or period of inoculation to the first day of symptoms break out is known to be from five to seven days and usually six days) the disease cannot be controlled in the least. When made 48 hours before tetanus may be avoided. If immediately following the injection of the toxin, the antitoxin be injected in small doses subcutaneously no tetanus ensues. Taken in all, the prevention or immunizing power of tetanus antitoxin is unlimited when curative power is absolutely *nil.*—(*Deutsche Thierärzt. Woch.*)

AMERICAN REVIEW.

POTASSIUM IODIDE FOR CHAMPIGNON [*By M. J. Treacy, Vet. U. S. Army, Fort Meade, South Dakota*].—The author narrates that last April he saw a horse used for livery purposes, emaciated, lame from an immense unilateral champignon. After draining off the effusion its base measured 17 inches by 8. There was no discharge, and no pus found upon exploration with trocar and canula. His physical condition was looked after by smoothing irregular teeth and administering a tonic, consisting of 2 per cent. acid sol. arsenic, ℥ x; tinct. ferri chlor., ℥ iy; strychnia hydrochlor., gr. xxvj; syrup simp., ℥ j. Mix. Sig. Shake; half ounce by syringe, morning and noon, with one drachm potash iodide every evening. Apply hose to scrotum for one hour night and morning; gentle exercise two hours daily. There was no visible decrease for ten days, after which the tumor rapidly reduced, the horse now resuming severe work, and in 26 days from beginning of treatment no trace of enlargement remained, the cord not being larger than finger. Although the animal has received hard work and little care, it has not returned. Author recommends the iodide of potash in two or three drachm doses daily until absorption begins at least, as he observed no improvement in above case until the system became saturated.—(*Jour. Comp. Med. and Vet. Arch.*)

SPASMODIC CONTRACTIONS WITH HYPERTROPHY OF THE RETRACTOR MUSCLES OF THE PENIS OF A BULL [*By D. S. White, D.V.M., Vet. Dept., Ohio State University*].—A bull was brought to the author with the explanation that when he attempted to serve a cow the penis failed to protrude from the sheath. The author was given an opportunity to observe the attempt, which was unusually vigorous. At the beginning of the effort the penis protruded two inches beyond the orifice of the prepuce, but as entrance was about to be made into the vulva it was drawn back again into the sheath and the ejaculation made therein. The retraction appeared to be made forcibly. On examination of retractor muscles of penis they could be plainly felt at their attachment to the S-shaped curve in the corpus cavernosum, and as the sexual excitement became greater they seemed to be thrown into tonic spasmodic contractions, drawing the penis far back into the sheath. The condition being permanent and the bull in this state worthless for breeding purposes, it was decided to sever the muscles at the S-curve. On cutting through it was noted that the muscles were hypertrophic, forming two distinctly marked semi-conical bands of about double the normal size. The fibres were seen on cross section as pale bundles of muscular tissue; the ligamentous structure correspondingly not so well developed as others subsequently examined. The operation, very simple, was followed by perfect recovery, and the bull has since stood at the head of a herd of forty cows, having sired a number of calves. The author has failed to find a similar case in the literature at his command.—(*Jour. Comp. Med. and Vet. Arch.*)

CORRESPONDENCE.

AS TO THE NEXT MEETING PLACE OF THE U. S. V. M. A.

ITHACA, N. Y., Dec. 20, 1897.

Editors American Veterinary Review:

DEAR SIRS:—In the December REVIEW, page 643, there is found a set of resolutions passed by the Pennsylvania State

Veterinary Medical Association regarding the next meeting place of the U. S. V. M. A., which deserves more than a passing notice.

The first "Whereas" defines, for the purposes of the parties interested, what they mean by "out West"; that is, Buffalo and Nashville are 350 miles or over from the Atlantic seaboard and only 3000 miles from the Pacific coast.

So far as we can tell, this association makes the line between the "West" and "East" the crest of the Alleghany mountains, which are continued northward by the Catskills and Adirondacks, leaving the writer still "out West," after having recently moved 2500 miles eastward.

The second "Whereas" avers that the veterinary profession in the East has been neglected through the holding of too many meetings in the "West." In this connection it should be recalled that the gentleman whose earmarks the resolutions bear, controlled the location of the meetings at Des Moines, Buffalo and Nashville.

The "Resolution" in chief is founded upon rather peculiar geographical ideas, when it favors the holding of the next meeting at Boston instead of "a long distance from the centre of membership." We have heard that Boston was "the hub of the universe," but had not supposed it was in the centre of the membership of the U. S. V. M. A. A casual study of the map would give one the idea that to the northeast, east and south of Boston the country is rather wet for veterinary practice, and that a line drawn through Boston from northeast to southwest would not leave very many members of the association on the easterly side of it. A careful study would probably reveal that the centre of our membership is west of Boston, and, if it be not so, it should be, as the centre of the veterinary population is probably nearly as far west as a line passing north and south through Chicago, and if the centre of our membership does not approximately correspond to the centre of veterinary population, then the association is at fault and should correct it.

There is a danger that, in case the meeting goes to Boston, the discrepancy between the centre of veterinary population and our membership may recede yet farther eastward. There is not universal confidence in the West that its membership is justly treated in the society. In the thirty-four years of its history, *one* member west of the Alleghanies has presided for *one* year, and the writer has heard murmurings from Western members that they should be so rarely honored.

Recently Eastern men quietly secured an amendment to our constitution by which, instead of one, there should be three Vice-Presidents—first, an Eastern Vice-President, from the territory east of the eastern time line (Buffalo); second, one from the central area, and, thirdly, one from the West, thus adroitly securing perpetually to the East the senior or ruling Vice-Presidency, so that, no difference what may happen to the President, the Vice-Presidency renders the East secure in its control, with the Second and Third Vice-Presidents thrown out as "sop" to Western members.

There is yet another possibility connected with the proposed selection of Boston as a meeting place to increase the distrust of Western members. An amendment to our constitution has been proposed to elect the President for a term of two years. If the meeting goes to Boston, the extreme easterly point available, the Western attendance will be light; and, if the amendment passes, the first President elected under the new *régime* would, in all probability, be an Eastern man, and Western members would be prone to believe that in 1899 the meeting would go West, to return eastward in 1900, in good time for the election of a President for two more years. Such a course is readily attainable under our constitution, by which the President, through his Executive Committee, which he selects, names the place of the meeting.

With a record of 34 Eastern Presidents to one from beyond the Alleghanies, and with 29 Atlantic seaboard meetings, against 5 trans-Alleghany meetings, it seems unfortunate that a cry of sectionalism should be first raised by Eastern members.

The selection of the next meeting-place will, perhaps, influence the action upon the proposed amendment to elect a President for two years. Few, if any, Western members favor it, and wherever the meeting shall be held it is to be hoped the amendment will be defeated. We have sufficient data since 1890 (the date of the first trans-Alleghany meeting) to defeat the proposition on its merits. From 1890 to 1897 inclusive, five men have presided—three for one year each, one for two, and one for three successive years, without any tangible evidence being adduced of the superiority of a long over a short term of office.

Our most available data for comparison are finance, publications and membership. While our records are not perfectly clear, the following tabular data will be found approximately correct:

Administration of.	Date.	Increase or Decrease in Funds.	Number of Annual Proceedings Published per Annum.	Increase or Decrease in Membership.
Michener.	1889-90	—$ 5.39	1	+ 33 or 33 per annum
Huidekoper.	1890 92	+ 18.11	*0	+ 26 or 13 " "
Williams.	1892–93	+ 117.58	2	+ 68 or 68 " "
Hoskins.	1893–96	— 351.81	$\frac{1}{3}$	— 47 or 16 " "
Osgood.	1896–97	+ 328.52	1	— 7 or 7 " "

* Report of 1890 was published by AM. VET. REVIEW without supervision by or expense to the association.

A study of these data will show that the greatest gains in funds, membership and publication of proceedings were attained during one-year administrations, and it may be added that the highest sum of money in the treasury ($875), and the maximum membership (390) and number of annual reports published in one year was attained in 1892–93, a one-year administration, while the lowest ebb of our treasury (9 cents—several hundred dollars indebtedness) was reached in 1895, the middle year of a three-years presidential term, while the decrease of 47 in membership during this administration excels all other records in our history.

With such facts confronting us, there seems little argument in favor of prolonging the presidential term, especially in face of the alleged precedent that a *faithful* President must be re-elected and that the one-year Presidents have been incompetent.

W. L. WILLIAMS.

A "CAUSTIC" COMMUNICATION FROM THE ACCREDITED CREATOR OF THE "CAVALRY CAUSTIC."

FORT SAM HOUSTON, TEXAS, Dec. 9, 1897.

Editors American Veterinary Review :

DEAR SIRS :—At the last meeting of the United States Veterinary Medical Association, some smart Alick, name unknown and presumably of little consequence, constituting himself a watch-dog or a bull-dog of that Association, brought my name before the Executive Committee as an advertiser of a patent, quack, or cure-all remedy, viz., "Griffin's Cavalry Caustic," purporting to cure spavin, curb, ringbone, sidebone, splint, rheumatism ; supplanting the firing iron and raising hades generally with the regular practice and the superficial and deep anatomy of the *genus equi*, and all for a dollar a bottle of six-ounce capacity, warranted to last a life-time if kept well corked and in a cool place. The S. A. doing the private detective business on his own hook for the Association, probably during the lonesome days between "calls," could have reached the "Cavalry Caustic" man by mail, but he didn't try; he evidently thought he had him by the genital glands, and produced in evidence a cut of a cavalry horse, backed by an out-of-date trooper, said cut showing the legend of the cure underneath, and offering the formula for $20, cold cash; and he proceeded to apply the vise to the grip he thought he had on that part of the anatomy where the appendage is supposed to be abbreviated.

For the benefit of numerous acquaintances and a few friends in the profession veterinary, I take this opportunity of disclaiming any connection with the advertising scheme above referred to, for proof of which see stoppage of ads., not because I feared to antagonize the opinion of any individual or body of individuals, but because I was unaware of the ads. until they brought in a number of orders, which were not filled. The scheme originated in the mind of a friend with an eye to the omnipresent ducat, regardless of other considerations; the ads. referred to made their appearance in the *Horseman* and *Horse Review* during the month of August, I believe, but were unknown to me until orders began to arrive, as I am not a subscriber to these papers, although I must thank the proprietors for forwarding marked copies during the run of the ads. The stuff advertised was a liquid blister that has been prescribed in my practice for several years, and has no advantage over other ordinary blistering preparations except as to uniformity of strength and cleanliness. My friends in the Association need have no fear of defection from its tenets on my part without first offering my resignation as a member; but, to show that no ill feeling exists, I am willing to furnish the gaping hiatus in the spissitude of the cranium of the active Alexander with the formula of the "Cavalry Caustic," "*free*, *gratis*." Yours euphemistically,

G. E. GRIFFIN (Vet.), *New York.*

OBITUARY.

ALEXANDER W. STEIN, M. D.

The profession, and especially the alumni of the American Veterinary College, will learn with the most sincere regret of the death of this distinguished surgeon, which occurred at his residence, 30 West Fifteenth Street, New York City, on Sunday morning, December 5th, after a long illness, of cirrhosis of the liver, aged 57 years. There is probably no one outside of the profession of veterinary medicine who was a better friend to it, nor one who did as much disinterested work for its advancement. Connecting himself with its fortunes in 1870 as Professor of Physiology at the old New York College of Veterinary Surgeons, he has labored in its ranks ever since, with no hope of reward other than the love he bore to the struggling profession. First attracted to it by the enthusiasm of the little handful of men working to implant the true science in America, he withdrew from the old school when it was disrupted in 1875, and accepted a like position at the American when it began its career, and he never relinquished his work until a year or two ago, when his son, Dr. John Bertune Stein, who had received his father's enthusiasm for the veterinarian, took up the work his sire had done so long and well.

Born in Hungary, the son of the surgeon-general of the Hungarian army under the famous Louis Kossuth, he came to America as a child with his father when the revolution started in that country, and was in the carriage with a twin brother following Kossuth in the demonstration made in his honor in New York City.

He was attending surgeon to Charity Hospital, New York; wrote several works on surgery, having an international reputation as a writer on that subject; was a professor in the New York College of Medicine; a member of the New York County Medical Society and the Academy of Medicine. He served as a surgeon in the army until the surrender of Lee. A widow and four children survive him.

C. C. TIETJENS, D. V. S.—At San Francisco, Cal., December 11, 1897, C. Chauncy Tietjens, graduate of the American Veterinary College, class of 1897, died of tuberculosis. He was an ambitious student, and studied persistently to attain his education, handicapped by the continual tightening of the hand of his insidious malady, and, when his object had been attained, found that his labors had been in vain, that his days were numbered. How sad, at the threshold of a brilliant and coveted career.

JOHN H. ADAMSON, M. D. C., formerly professor of anatomy in the United States College of Veterinary Surgeons, Washington, D. C., died in St. Paul, Minn., Oct. 25, from injuries received from the kick of a horse which he was treating, and resulting in perforation of the small intestines. Dr. Adamson graduated from the Chicago Veterinary College in 1893, having passed his first session at the New Veterinary College, Edinburgh, Scotland, and was 39 years old at the time of his death.

A. L. HUMMEL, M. D., late of the University of Pennsylvania and former publisher of the *Journal of Comparative Medicine and Veterinary Archives*, died at Denver, Col., October 24th, aged 40 years.

SOCIETY MEETINGS.

MONTREAL VETERINARY MEDICAL ASSOCIATION.

The regular meeting of the society was held in the library, the President, Prof. Charles McEachran, occupying the chair. There were also present Drs. Martin, Thurston, and Sugden, and a full attendance of members.

After roll-call and the reading of the minutes, the question was raised as to the binding in yearly volumes of the various magazines belonging to the society, and the President appointed Messrs. Spanton and Wallis to look them over and report any numbers that might be missing, in order that they should be replaced.

Mr. Pfersick then reported an operation for the removal of a fourth upper molar in a horse, by trephining. He stated that the patient had been treated by a quack for three months for indigestion, and, no improvement being made, the owner had come to him. On examination, he found the animal to be suffering from a decayed upper molar on the right side, and that there was only a slight extension projecting above the gum. An attempt to seize this with forceps failed, owing to the stump breaking off, and the owner insisted upon having it removed. Mr. Pfersick decided to trephine. This operation he performed successfully after placing the animal under the influence of chloroform, treating the resulting wound with daily administrations of antiseptic plugs and injections. Two months later the owner informed him that the cavity was healing up rapidly and the general condition of the animal had improved greatly.

A short discussion ensued as to the advisability of undertaking this operation frequently, the chairman stating that out of many experiences of his own but few had done well, owing partly to the neglect of attendants in keeping the socket clean and to the trouble caused by the opposite molar growing up into the vacant space. He requested that the case be again reported on.

Mr. Paquin followed with an essay on "Rabies." After tracing its history from the time of Aristotle to the present, he enumerated the various theories as to its causes, the most direct one being that of inoculation with the saliva of a rabid animal. The different periods of incubation, which he stated might extend from three days to a year or more, were attributed to the quantity of the virus inoculated, also the extent and locality of the wound. The symptom of the raving form and the mute or paralytic form were carefully described, as was the manner in which the animal being at one stage unable to swallow would go into convulsions on being given water, which had been the cause of this disease being erroneously called hydrophobia. As regards differential diagnosis between this and certain other diseases with which it might be confounded, he especially pointed out the inclination of an animal to bite itself, or any object coming across its path, and to swallow, before paralysis of the pharynx occurred, stones, chips, and other foreign matter. As preventive measures after inoculation, he stated that cauterization or excision of the wound, if performed within a reasonable time, had in most cases enabled people to escape, owing to the fortunate fact that the virus was very slowly absorbed. The wisest course to pursue, however, was at once to go to the nearest Pasteur Institute, where a cure and immunity for from three to five years could be obtained in ninety-nine per cent. of the cases. A vapor bath at a hundred and twenty degrees, for fifteen or twenty minutes, was also often successful. This cure was discovered by Dr. Buisson, thirty-five years ago, who, having been bitten by a rabid patient and the symptoms being developed in himself, resolved to die in a vapor bath, which to his surprise completely cured him. In conclusion, he pointed out the folly of killing dogs that had bitten people, when the proper course should be to keep them quietly in confinement, to notice whether symptoms of rabies were developed or not.

Dr. Martin, in response to a request from the chair, then addressed the meeting. He stated that rabies attracted more attention in Europe, owing to its greater prevalence there. During a visit to Paris he had spent some time at the Pasteur Institute and had been much struck with the affectionate manner of the afflicted animals, also their peculiar shrieking bark, which was so characteristic that people were able to detect a rabid animal by hearing it. It had been proved, he said, that the virus traveled along the nervous system, for if a subject were inoculated, and the nerve trunk then divided, it would often escape. Continuing, he described the method in which the virus was prepared for inoculation against the disease, and with regard to the periods of incubation, stated that a bite on the face was most rapidly fatal.

The President then thanked Dr. Martin, and congratulated the society upon the opportunity they had had of listening to such an able authority. Considering the ground had been so well covered, he would not detain them beyond mentioning that it was not necessary to have a scar. The mere fact of having one's face licked by a rabid dog was sufficient for inoculation. The disease, he said, was most frequently seen in foxhounds and mongrels, owing to their habits of cohabitation, but during his practice in Canada he had never yet come across a case, though it was stated that an officer in Quebec, some years ago, had died from the bite of a rabid fox.

There being no further business, the meeting was adjourned.

W. B. WALLIS, *Secretary.*

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The November meeting was called to order on the 9th inst., by Vice-President H. P. Eves, Dr. Pearson having sent word that it would be impossible for him to be present early. Those present were Drs. J. Cheston Morris, Robt. Gladfelter, John B. Raynor, Otto G. Noack, G. W. Shaw, F. S. Allen, H. P. Eves, W. H. Hoskins, W. S. Kooker, Chas. Lintz, Jas. T. McAnulty, Leonard Pearson, J. B. Rayner, W. L. Rhoads, Thomas B. Rayner, C. J. Marshall, John W. Adams. Also, Messrs. J. M. Megary, Lewis D. Horner, A. E. Cunningham, Bassett Kirby, P. K. Jones, John J. Repp, Wm. Hughes, J. E. Spindler.

After the regular routine of business, Dr. Kooker reported a case which he had diagnosed as azoturia. After giving the history and treatment, from which he had received but fair results, he said he wanted advice.

Dr. Hoskins thought from the history and progress he would consider it a case of immobility.

Dr. Eves spoke of having a number of just such cases in certain localities, and felt it was due to some cerebral lesion, but could not say just what, as the attacks were short and invariably ended in death.

Drs. Pearson and Adams now came in, and upon Dr. Pearson's taking the chair he called upon Dr. Adams for his paper on "Opacities of the Crystalline Lens in the Domestic Animals." Dr. Adams dealt with his subject strictly from a practical standpoint. He first gave the names of the many opacities, more commonly known as cataracts; then told of the symptoms and conditions by which each might be known; he then told of the treatment and possible chances of recovery, explaining the different operations and the many appliances from which one might choose.

Dr. Pearson now read a paper on "Methods of Meat Inspection Now in Vogue throughout the Civilized World,"* and he offered many valuable suggestions for the improvement of the inspection of Philadelphia's meat supply.

During the general discussion which followed he suggested that the killing here be done at a central abbatoir, or that all killing be done at certain hours, so the inspectors might more thoroughly cover the ground.

Dr. Schrieber, one of the present inspectors, told of the work they were doing. He explained the present method of inspection, and told how and why they were greatly handicapped by the present conditions.

Dr. Hoskins said the people of New York City owed much to their Woman's Health Association, who had been fighting for seven or eight years to improve their inspection of meat and milk, which is now done under a high standard, while the surrounding towns are satisfied to take any and all meats dumped upon their market stalls.

Drs. Otto G. Noack and W. S. Kooker thought we should give special attention to market inspection. Dr. Adams thought we should first control the killing through central abbatoirs, then look after the markets for tainted and otherwise unwholesome meat.

Dr. Allen spoke of the delivery of milk in glass jars, saying the milkman would fill the jar coming from a pest-house and give it to the next customer. Dr. Morris says this was not the proper method of serving in glass jars. His method was to have all milk bottled at the dairy and sealed with a label bearing date of milking and address of owner. It could then be traced at all times, and if these jars were properly sterilized when returned home disease could not be carried.

An exceedingly interesting report from Dr. E. Mayhew Michener on "Intussusception"* two feet three inches in length of small intestines of colt, operation and recovery.

Dr. J. Cheston Morris now told of the post-mortem held upon Chief Utan, who had so lately died at the Philadelphia Zoo, he having an invagination of four inches.

Dr. Hoskins, as chairman of committee appointed to confer with the Woman's Health Protective Association, now reported what had been done, and gave notice of meeting to be held by Woman's Health Protective Association at an early date, to which all veterinarians would be more than welcome. The hour being late the meeting now adjourned, though there were a number who wished to report cases.

---

* Printed elsewhere in this issue.

W. L. RHOADS, D. V. S., *Sec.*

CHICAGO VETERINARY SOCIETY.

The December meeting of this society took place on the 9th at the Sherman House, and was called to order by President R. G. Walker, and twenty-two members responded to the roll-call. The minutes were adopted as read.

The Chairman, in his remarks, recorded the fact that during the last month he had succeeded as President of this society in ousting an empiric as veterinary attendent upon the horses belonging to the Board of Education, and had installed a member of this society in his stead.

The Secretary read a letter received from the Civil Service Board of Commissioners confirming their verbal promise to hold an examination of veterinarians practicing in the city with the object of determining the fittest one for appointment as veterinarian to the police horses of the city. The letter, however, in its final ambiguous sentence evaded giving a definite date for the same.

Report of Committee on Legislation.—The above subject was discussed very thoroughly, and the discussion resulted in the following motion: "That the Secretary be instructed to write to the Civil Service Board of Commissioners asking them to appoint a time at which they would meet our Legislative Committee with a view to obtaining the board's decision regarding the date of the promised examination for the appointment of veterinary surgeon to the police horses of the city." It was moved by Dr. E. L. Quitman, and seconded by Dr. McGrath, and carried by the meeting.

Report of the Special Committee appointed at our last meeting to "draft a guide which would aid us in distinguising a sound from an unsound, or a 'serviceably sound' horse when under professional examination." Dr. Jos. Hughes, as chairman of that committee, made the report. The committee found that this work exceeded in volume the time at their disposal to accomplish it. They, however, made a list of 140 blemishes, defects and diseases which ought to be severely dealt with, and recommended that the matter be discussed and passed upon by the entire society at our regular meetings, and further that a stenographer should be engaged to report the discussion with a view to publication in the veterinary journals, the said report first to be edited by our Committee on Literature and Publication. The recommendation was well received by the members, and resulted in the following motion of Dr. Gysil's: "That members be appointed at each meeting to lead the discussion on one or more of these abnormal conditions enumerated in this list, and that a stenographer be hired to report such discussions with a view to their publication, after being edited by our Committee on Literature and Publication."

The Board of Censors had no report to make, but their function was called into action in the following manner. On October 14th, the following motion was carried by the meeting: "That any of our members who are assistants of the present State Veterinarian (the same being an empiric and therefore objectionable) be invited to appear before our Board of Censors at our next regular meeting, and show cause why their resignations should not be called for by the Society." Two of our members being in that position, were so notified, and neither of them appeared on November 4th, at our meeting, as requested, nor made any communication on the subject to the Secretary. Dr. Jos. Hughes, as Chairman of this Board, stated that the appointed time for these gentlemen making their defense had passed and that expulsion from the Society was in order. Still, as one of the gentlemen was present, a motion to reopen the subject ought to be in order. This was allowed by the chair, the motion was put and carried, and the member in question invited to give his reasons for continuing to hold his commission. This member stated that he had been many years in that service and that it did not matter to him who was State Veterinarian, that friends whom he had consulted had advised him not to give up his position, that the blunder was on the part of the Governor in appointing such an officer, and that he wished to retain his membership, but had resolved to hold his commission. Some of the members who spoke inclined to the opinion that he should be allowed to retain both membership and commission. Dr. Hughes, practically alone, stood firmly by his initial statement, and asserted that expulsion was the only logical course for the society to take. Upon motion, all action in the matter was postponed until next meeting.

After some further routine business the meeting was adjourned.
JAMES HENDERSON, M. R. C. V. S., *Sec'y.*

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The December meeting was called to order at 8.30 o'clock on Wednesday evening, Dec. 1, 1897, at the New York Academy of Medicine, by the President, Dr. Huidekoper. The following members responded to roll-call: Drs. Bretherton, C. C. Cattanach, J. S. Cattanach, Delaney, Ellis, Farley, Huidekoper, Hanson, Mac Kellar, Neher, O'Shea, Robertson and Ryder (13).

Reports of Committees.—The committee appointed by the President to search the register, in reference to the qualification to practice of Messrs. Grenside and Hinkston not being present, President Huidekoper reported that Hinkston was *not* eligible to qualify by virtue of the penal code, he having been guilty of a felony.

The following communication from Dr. John J. Cattanach was next read by the Secretary:

Dr. R. W. Ellis.

DEAR SIR:—As I am about to retire from the veterinary profession, would beg of you to hand in my resignation to the Society.
Very truly yours,
JOHN J. CATTANACH.

Moved and seconded, that the resignation be accepted with the regrets of the association. Carried.

Next in order was the election of officers for 1898. Nominations as follows: For President, Dr. Huidekoper and Dr. Bell; Vice-President, Dr. Robertson and Dr. Hanson; Treasurer, Dr. C. C. Cattanach, Dr. Ryder and Dr. Hanson; Secretary, Dr. Ellis. Result, by ballot for first three officers, Dr. Huidekoper was elected President, Dr. Robertson Vice-President, and Dr. Hanson Treasurer. In election of Secretary, it was moved and seconded, that the by-laws be suspended, and the election declared unanimous. Carried.

Next business in order was the Treasurer's report. The retiring Treasurer, Dr. C. C. Cattanach, submitted the following report for the two years in which he has served the association in that office: Feb., 1896, balance received from former Treasurer, $13.18; received from Secretary, $534.00; total, $547.18; expenditures, $524.90; leaving a balance in treasury of $22.28. Appended to this was an itemized list of the expenditures. Moved and seconded that the report be accepted. Carried.

Reports of Cases.—Dr. Neher recalled a case reported by him some time ago which he had diagnoised as purpura hæmorrhagica, which he says was entirely wrong, as he has since had evidence that the conditions found were due to traumatism.

Remarks by members.

Moved and seconded that the meeting adjourn. Carried.

ROBERT W. ELLIS, D. V. S., *Secretary.*

ILLINOIS STATE VETERINARY MEDICAL ASSOCIATION.

The fifteenth annual meeting of the association was held at the Sherman House, Chicago, Nov. 3, 1897, and was called to order at 10 o'clock A. M., Dr. Alverson, Vice-President in the chair. Roll-call showed a rather poor attendance, but the members kept dropping in till the room was crowded.

The minutes of the previous meeting were read and approved.

Moved by Dr. Tyler, seconded by Dr. Wilson, that Dr. H. Thompson, of Manhattan, be reinstated on payment of dues to date. Carried.

The treasurer reported moneys on hand, $35.22, and the report was accepted.

Moved by Dr. Wilson, seconded by Dr. Ryan, that the bylaws be suspended for the purpose of balloting for new members. Carried.

Drs. R. Hoadley, Barr of Maroa, and C. G. Davis, of Ottawa, were elected to membership.

The meeting then adjourned for dinner.

The meeting was called to order at 2.30 P. M. by the Vice-President.

Dr. James Henderson read a paper on "Milk Inspection," which was not only fully discussed by the members present, but also by the representatives of the principal dairies, who were present by invitation.

Dr. A. H. Baker read a paper on "Icterus in the Horse," which was listened to attentively and thoroughly discussed.

Dr. Tyler's paper on "Phlegmonous Erysipelas," resulting from a blistered fetlock, led to considerable discussion.

A vote of thanks was tendered to the essayists.

Under the head of election of officers, the following gentlemen were elected: For President, Albert Babb, Springfield; Vice-President, W. J. Martin, Kankakee; Secretary, S. S. Baker, Chicago; Treasurer, R. G. Walker, Chicago.

The new President appointed the following Committees:

Arrangement—Alverson, Campbell and Weese; Programme—Newby, Henderson and Brown; Censors—A. H. Baker, Tyler and Welch.

Under the head of new business, Dr. A. H. Baker moved, seconded by Dr. Tyler, that the money contributed by Drs. Campbell and Alverson for legislative purposes be refunded. Carried.

Dr. Babb presented a bill for monies expended for legislation purposes, amounting to $22.00. A bill from the Secretary for fees and for printing, amounting to $45.13. They were audited and ordered paid.

Under the head of miscellaneous business, Dr. A. H. Baker spoke at some length on the subject of the members of the association acting as Assistant State Veterinarians under a non-qualified man. Dr. Alverson, one of the assistants present, said in defense of himself, that he would resign if all did in a body, or if a majority would, and that if he resigned, another qualified man would fill his place, and he did not think he ought to resign and let some else have the berth. Dr. Walker thought all should resign and not hold on because some one else would slip into their shoes, and if all resigned the Governor would see he had made a mistake and appoint a qualified man. Dr. Tyler said he was under obligations to the members of the Live Stock Commission; they wanted him to serve, and he felt he ought to serve, and he felt he ought to hold on to the office: he did not think anything we could do would affect Gov. Tanner; he did not know what to do, but thought he would hold on. Dr. Martin said he was slated for the position before the present incumbent was appointed, and felt he had to hold his position in order to placate his political friends. Still he was not particular what he did. He thought a man could do as he liked so long as he did not violate the Code of Ethics of the association. He thought it was interfering with a man's personal liberty. Moved by S. S. Baker, seconded by Dr. Walker, that the question of the members resigning their official positions, be laid over till the spring meeting. Carried.

Moved by Dr. Walker, seconded by Dr. Hughes, that the members in arrears for dues be notified to settle or be expelled. Carried.

Moved by Dr. Alverson, seconded by A. H. Baker, that the next meeting be held in February, at Bloomington. Carried.

On motion meeting adjourned.

S. S. Baker, *Secretary.*

MISSOURI VALLEY VETERINARY MEDICAL ASSOCIATION.

The regular quarterly meeting was held at the Kansas City Veterinary College on the evening of December 8th. The meeting was one of the very best ever held by the association; some of the oldest members expressed themselves that it was the best meeting, all things considered, that they ever attended. Every paper on the programme was read by its author, and the members present entered into the discussions with great interest.

The meeting was called to order by the President, Dr. Hunter. Members present: Drs. Wright, Black, Moore, Sihler, Harrison, Stewart, Steddom, Hopkins, Kaupp, Johnson, Hunter and Heck. Visitors of the profession: Dr. Ewing of this city, and Dr. Knivley of Topeka, Kansas, and many students of the Kansas City Veterinary College.

Dr. Heck was elected Secretary and Treasurer to fill vacancy.

The literary programme was good and the discussions which followed the papers brought out many interesting and valuable ideas. Dr. Sihler's paper on "A Nasal Polypus" was a history of a case met by him in practice. The tumor being a large one situated at the posterior nares, closely adherent to the vomer and adjacent tissues. The animal breathed with very great difficulty. The operation consisted in cutting through the trachea and larynx, and lifting out the tumor. Operation successful, recovery rapid and satisfactory.

Dr. Harrison read reports of several cases; the one drawing out the most discussion was "Rabies." The author thought cattle more susceptible to rabies than men.

Dr. Moore read report of case of "Traumatic Pericarditis," which was well discussed.

Dr. Steddom finished the programme by a paper on "Injuries to the External Ear." He advanced a new idea on treating ears that have been skinned and incline to curl. He favored splitting the cartilage and allowing same to heal before stitching up. Dr. Moore reported good results in split ears from simple stitching and coating surface with glue.

W. A. HECK, D. V. M., *Secretary.*

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

The President of this Society, Dr. W. L. Baker, has appointed the following committees for the ensuing year:

Executive:—N. P. Hinkley, Chairman, James Law, Roscoe R. Bell, John A. Bell, C. D. Morris.

Legislative :—William Henry Kelly, Chairman, James Law, Arthur O'Shea, C. D. Morris.

By-Laws :—Roscoe R. Bell, Chairman, James Law, C. D. Morris.

Arrangements :—C. D. Morris, Chairman, Harry D. Gill, Arthur O'Shea, Robert Dickson, E. B. Ackerman.

County Secretaries :—A. G. Wicks, Schenectady, Schenectady Co.; H. B. Ambler, Chatham, Columbia Co.; George H. Berns, Brooklyn, Kings Co.; John A. Bell, Watertown, Jefferson Co.; W. L. Baker, Cortland, Cortland Co.; A. W. Baker, Oneonta, Otsego Co.; E. F. Bettinger, Chittenango, Madison Co.; H. E. Clark, Newburg, Orange Co.; James Carnrite, Amsterdam, Montgomery Co.; Charles Cowie, Ogdensburg, St. Lawrence Co.; J. M. Chase, Seneca Falls, Seneca Co.; W. H. Carpenter, Johnstown, Fulton Co.; J. M. Currie, Rome, Oneida Co.; A. Crowforth, Lockport, Niagara Co.; E. M. Casey, Oxford, Chenango Co.; G. G. Dean, Tulley, Onondago Co.; O. B. French, Honeoye Falls, Monroe Co.; J. A. Genung, Ithaca, Tompkins Co.; F. C. Grenside, Mt. Morris, Livingston Co.; H. D. Gill, 154 East Fifty-seventh Street, New York, New York Co.; R. C. Jones, Port Jefferson, Suffolk Co.; W. H. Kelly, 195 Western Avenue, Albany, Albany Co.; W. W. Kennedy, Fulton, Oswego Co.; F. L. Kilborne, Kellogsville, Cayuga Co.; G. C. Kesler, Holley, Orleans Co.; E. Latourell, Yonkers, Westchester Co.; C. D. Morris, Pawling, Dutchess Co.; James McKee, Stapleton, Richmond Co.; H. McWhinnie, Troy, Rensselaer Co.; J. McCrank, Plattsburgh, Clinton Co.; F. D. Markham, Port Leyden, Lewis Co.; T. F. O'Dea, Saugerties, Ulster Co.; Romanzo Perkins, Hardys, Wyoming Co.; D. H. Rowe, Little Falls, Herkimer Co.; J. L. Ronan, Corning, Steuben Co.; D. S. Saylor, Glens Falls, Warren Co.; Harry Sutterby, Batavia, Genessee Co.; W. B. Switzer, Williamson, Wayne Co.; W. J. Wadsworth, Cobbleskill, Schoharie Co.; John Wende, 1595 Main Street, Buffalo, Erie Co.

CLAUDE D. MORRIS, *Secretary.*

ONTARIO VETERINARY COLLEGE MEDICAL SOCIETY.

At the meetings of this Society the following papers have been read during November. Many of the papers and discussions were unusually interesting and instructive.

Essays—"Sheep-rot," by J. A. Raleigh; "Postpartum Hæmorrhage," W. D. Brand; "Hog Cholera and Swine Plague," B. Royer; "Ringbone," J. Young; "Castration," T. Sims; "Tuberculosis and Its Relation to the Veterinarian," C. W. Fisher;

"Ergotism," S. Caldbick; "Veterinary Profession," J. W. Parks; "Tetanus," J. S. Pollard; "Lymphangitis," G. H. Davidson.

Communications—"Pneumonia," W. A. Campbell; "Simple Ophthalmia in Sea Lion," J. L. Devereaux; "Laceration of Vagina," W. D. Brand; "Symptomatic Anthrax," G. T. Elliott; "Bruise of Calcaneo-cuboid Ligament," J. E. Ellis; "Removal of Carotid and Jugular," E. R. Stockwell; "Glanders," T. Lambrechts; "Laminitis," G. H. Davidson; "Enteritis," T. J. Fletcher; "Impaction of Colon," T. Sims; "Mammitis in Mare," J. Young; "Parturient Apoplexy," B. W. Groff; "Lymphangitis," D. H. McKay; "Eventuation," W. E. Fairbanks.

C. W. FISHER, *Secretary.*

MASSACHUSETTS VETERINARY ASSOCIATION.

The regular monthly meeting of the Massachusetts Veterinary Association was held at 19 Boylston Place, on Wednesday evening, October 27th.

President Winchester called the meeting to order at 8 P. M. Members present: Drs. Lee, Lewis, McLaughlin, Parker, Pierce, Soule, Stickney, Williams, Winchester, and Winslow.

Minutes of previous meeting read and adopted.

Drs. Albert A. Etienne and Clarence E. Beuchstead were elected members of the association.

Drs. Soule, McLaughlin, Pierce and Winslow reported interesting cases.

The subject of a State Veterinary Law was fully discussed, and a committee was appointed to draft a bill and report at the December meeting of the association.

HENRY S. LEWIS, *Secretary.*

IOWA STATE VETERINARY MEDICAL ASSOCIATION.

The next meeting of this association will be held in Des Moines on January 12th and 13th, 1898. Papers for this meeting are promised as follows: "Immunity," with stereopticon views, Dr. A. T. Peters; "Removal of Clitoris to Cure Viciousness," Dr. S. H. Johnson; "Influenza," Dr. S. H. Kingery; "Cases of Interest in Practice," Dr. R. R. Hammond; "Parturient Apoplexy," Dr. J. Thomsen: "Reflex Paralysis or Paralysis from Indigestion," Dr. J. G. Parslow; "Dairy Inspection," Dr. J. W. Griffith; "Practical Sanitation," Dr. J. I. Gibson; "Horse Breeding; How to Breed for Foreign Market," Dr. T. A. Bown; "Notes from Practice," Dr. J. H. McLeod.

As you see, we have a good programme, and I am anticipating a first-class meeting. JNO. E. BROWN, *Secretary.*

GENESEE VALLEY VETERINARY MEDICAL ASSOCIATION.

At the meeting of this association held on Dec. 9th, at the Livingston Hotel, Rochester, N. Y., most of the time was occupied in reading and accepting the by-laws which the committee had framed, and they are now in the hands of the printer. In the future meetings will be held in January and July.

After the by-laws had been disposed of, a paper was read by Dr. Palmer, of Scottsville, it being in the nature of an interesting case report. Several other cases were reported, and an interesting discussion followed, a number of valuable specimens being exhibited.

A very interesting and instructive address was delivered by the President. A. GEORGE TEGG, *Secretary.*

OHIO STATE VETERINARY MEDICAL ASSOCIATION.

The annual meeting of this association will be held at the Hotel Goodale (opposite the Capitol), Columbus, Ohio, on January 13, at 8 A. M.

All graduate veterinarians and veterinary students are cordially invited to attend.

W. H. GRIBBLE, D. V. S., *Secretary.*

NEWS AND ITEMS.

Dr. J. J. E. POE, of Boston, Mass., is at present visiting his old home in Ireland.

THE VETERINARY BLUE BOOK is in the printers' hands, and it is said to be a very complete affair.

ILLINOIS VETERINARIANS have important legislative questions to handle this winter. They should make a repetition of recent events impossible.

OSCAR BUSENER, D. V. S., of Twenty-fourth Street, New York City, has been compelled to relinquish his practice and go to the mountains in search of health.

DR. J. A. HUHNE, D.V.S., of Rondout, N. Y., has suffered the bereavement of the loss by death from cerebral apoplexy of his father, Dr. Augustus Huhne, of the same town.

THE STUDENTS of the Grand Rapids Medical College (Veterinary Department) have organized an association. The proceedings will be published in the February REVIEW.

DR. E. P. SCHAFFTER, formerly employed in the meat inspection service at Kansas City, has been transferred to Cleveland, Ohio, and placed in charge of the inspection at that point.

THE NEXT MEETING PLACE of the U. S. V. M. A., will soon be decided upon by the Executive Committee. There is considerable competition between the East and West for the honor.

AT the annual election of officers of the Veterinary Medical Association of New York County the old officers were re-elected, with the exception of the Treasurer, who was replaced by Dr. H. D. Hanson.

THE REVIEW trusts that the long winter evenings may be utilized by veterinarians in writing up interesting cases from their note-books, for publication in its pages. *Non nobis solum.*

HORSE SHOWS have been of great service to horse interests, and incidentally to the veterinarian. They should be encouraged and the best way to do so is to keep dealers out of them as exhibitors.

LOVES THE REVIEW.—A Pennsylvania subscriber writes as follows, under date of Dec. 2: "I subscribe for two American, one English, and one German veterinary journal. I like them all, and cannot see how I could afford to get along without them. But I *love* the REVIEW."

"DAIRY SCHOOLS," by R. A. Pearson, Assistant Chief of the Dairy Division of the Bureau of Animal Industry, is a most instructive bulletin of the Department of Agriculture, being nicely illustrated and full of most useful information for those interested in this very important branch of our food supply.

MARCUS DALY'S BITTER ROOT FARM, in Montana, is a wonderful estate. It contains 16,000 acres and has on it some 600 horses. It employs 425 men the year round and the stables and quarters are a marvel. Every stall is lighted by an electric light while the walls and partitions are of two inch plank with a dead air space in each.

EXPORTING HORSES.—The largest export trade in the history of the Chicago horse market is promised by present indications. The arrival of foreign buyers is earlier than usual and larger numbers of purchasers are expected. While they have unlimited orders as to numbers they are more than ever particular concerning the character of the horses that they buy, and insist on a better quality than heretofore. The presence of these buyers will stimulate the market greatly.—(*Breeder's Gazette.*)

MORE INTEREST NEEDED.—A member of the Veterinary Medical Association of New York County writes as follows to the REVIEW: "Do the veterinarians of Greater New York take an interest in their profession? If so, why do they not join the Society and thereby do some good, not only to the profession, but to themselves? All are invited to attend the meetings, which are held at the Academy of Medicine, Forty-third Street, near Fifth Avenue, on the first Wednesday in each month."

PROSECUTING ILLEGAL PRACTITIONERS IN BUFFALO.—Within a short period two convictions have been secured, mainly through the efforts of L. E. Willyoung, D. V. S., of Buffalo, N. Y., against two unlicensed graduates, both parties paying their fines and costs of action without coming to trial. Two others are now held for the grand jury, and an action has been brought against another for dehorning cattle, to recover $1000. Illegal practitioners of veterinary medicine will probably give Buffalo a wide berth.

LITMUS PAPER IS NOT RELIABLE.—We have much pleasure in giving publicity to a very useful and ingenious little appliance in the form of a "litmus pencil." Its use is so obvious that comment is unnecessary. We have no doubt but that it will soon in great measure supersede the old form of books. To medical men it will certainly be a great boon, as it can be carried in the pocket and contains a practically inexhaustible supply of litmus always ready. It is made by Mr. Tyree, a chemist at Washington, D. C., and mailed to any address for 25c.

TANNED A GIANT BULL'S HIDE.—What is probably the largest bull hide in America has just been tanned and prepared with the hair on at the works of the Henry Lang Company for J. Stern & Sons, Philadelphia, Pa. The bull, when in life, was the famous Duke of Salem, weighing 3000 pounds, and was the star attraction at the opening of an abattoir in Philadelphia on September 30. In the presence of four thousand spectators the animal was led out to slaughter. The ordinary apparatus for slaughtering cattle was too small to use upon the Duke, so a well directed rifle shot in the exact centre of the forehead did the work. The hide weighed 209 pounds in the "green" state, while the ordinary weight of large bull hides is eighty-five pounds. The hide at the head was two inches thick and had to be cut out, having been too thick to be tanned. The largest leather working machinery known to the trade was too small to work this hide, which necessitated some trimming. The hide contains nearly one hundred square feet.

STARTING A BALKY HORSE.—The following contribution to the numerous and varied "sure cures" for a balky horse is credited to John Haines, the manager of the Tewkesbury stable: "For the benefit of those who have been caused a great deal of anxiety by a balky horse and have lost trains as well as their tempers and even sometimes ruined the horse, the next time they should have the experience or should run across a balky horse, no matter how bad he is, let me tell you how to start him ninety-nine times out of 100. Of course it may fail one time in 100. When a horse balks, no matter how badly he sulks or how ugly he is, do not beat him, do not throw sand in his ears, do not use a rope on the front legs, or even burn straw under him. Quietly go and pat him on the head a moment, take a hammer or even pick up a stone in the street, tell the driver to sit still, take his lines and hold them quietly while you lift up either front foot, give each nail a light tap and a good smart tap on the frog. Drop his foot quickly and then chirp to him to go. In ninety-nine cases out of 100 the horse will go right along about his business, but the driver must keep his lines taut and not pull nor jerk him back. If I have tried this once I have tried it 500 times, and every time I have suggested it people have laughed and even bet $5 and bottles of wine. So far I have won every bet. This may make you smile, but a horse has more common sense than most people are willing to give him credit for. The secret of this little trick is simply diversion. I am a firm believer that with kindness and proper care and treatment a horse could be driven with a string."

FOR SALE.

A substantial and commodious brick veterinary infirmary, office and residence, centrally located in a thrifty city of 25,000, and surrounded by a very rich agricultural and breeding country.

The leading practice of the entire region has for fifteen years been and is still being conducted in this property.

It is offered at less than 60 per cent. of cost, with cash payment sufficient to insure sale, balance at low interest and as long time as may be asked.

An exceptional opportunity for an energetic, up-to-date man.

Address W. L. WILLIAMS, Cornell University, Ithaca, N. Y.

AMERICAN VETERINARY REVIEW.

FEBRUARY, 1898.

All communications for publication or in reference thereto should be addressed to Prof. Roscoe R. Bell, Seventh Ave. & Union St., Borough of Brooklyn, New York City.

EDITORIAL.

THE FUTURE OF VETERINARY EDUCATION IN NEW YORK STATE.

A valued correspondent of the REVIEW, whose opinion upon any question involving the welfare of the veterinary profession is always gratefully received, because, aside from being the outcome of earnest thought and sound judgment, it is patriotic and sincere, has favored us with his views upon the present attitude of the Board of Regents toward the medical colleges of the State in reference to the requirements for entrance to their classes. He takes a very hopeful view of the situation, but we fear that his desires have outgeneraled his judgment in this instance. He cannot more wish for the consummation which he pictures than does this journal, but he has rather increased our skepticism than destroyed it, for the reason that one so endowed with ingenuity as he has failed to demonstrate one single cause that is even likely to lead to results which he pretends to believe are to flow from the beneficent statute that is now harassing the once far-famed medical schools of the Empire State. He says: "While the 48-count requirement is almost prohibitive at present . . . I have faith that in time matters will adjust themselves, and that the law will prove itself a great boon to the profession in New York." We quite agree with our correspondent that "matters will adjust themselves"; in fact, they are very rapidly undergoing the process of adjustment at the present time—to the end that students are being driven out of the State, and certainly very few are bold enough to enter it in quest of medical, veterinary or dental education. A dental college of this State, we are told, which normally has about 500 students, has this year about 135, while a like institution in a neighboring State, which formerly had fewer students than the New York school, has this year nearly 1000. A study in cause and effect. Even when such an instance as this is considered it must be borne in mind that the New York colleges are carrying considerable "held over" material this year: those who entered under the lesser requirement, those pursuing a post-graduate course, and "plucked" students. Eliminate these, and make an estimate based upon the present demands of the Regents, and the percentage will drop to such a figure that even our hopeful correspondent will substitute "ruin" for "boon."

Is all this in the interest of higher education? It is said that it is easier to pass the Board of Examiners for the licensing degree than it is to pass the Regents to enter the schools. This means that students will prepare themselves for the Examiners in other States, and if they fail to secure their licenses they have simply to shift the scene of their endeavors outside of New York. Therefore, our near-sighted law-framers have failed to raise the standard of education; they have merely decreed that young men shall not be taught the medical sciences in this State. No matter how poor a standard shall be set elsewhere, she will force her citizens to accept it or go without. The law is a failure, and the sooner it is made to conform with common sense the less injury will be inflicted upon the fame and fortune of the Commonwealth. She could by a generous graduation have raised the requirements for entrance into her schools to a point higher than any other State dared to follow, and yet retained her own citizens as pupils and invited those of her neighbors by virtue of her superior facilities for imparting knowledge, clinical and otherwise; but this was not logical to those who are responsible for the obnoxious law, and the disaster which is impending is as inevitable as night is to follow day, unless the representatives of the schools act with prompt-ness, decision and effect. We are credibly informed that a movement is now under way in the medical faculties to secure a modification of the law—a modification which shall mean for medical education in this State its elevation, not its elimination.

THE U. S. V. M. A. TO MEET IN OMAHA IN 1898.

The balloting by the members of the Executive Committee of the National Association has resulted in the selection of this Nebraska city for the annual meeting of 1898, and we hasten to congratulate the association upon what we believe to be a very wise selection. The chief competitor of Omaha was Boston, and in choosing the former no reflection is cast upon the Hub, whose veterinarians are famous everywhere for their enthusiasm and pride in their profession and their hospitality; but it is for the interests of the great and influential organization that this decision has been reached, and we are sure that upon reflection all members having its welfare at heart will so acknowledge it. For an association whose membership extends from the Atlantic Seaboard to the Pacific Coast the location of its annual conventions should be as nearly central as possible, and in this aspect Omaha as nearly meets this requirement as it is possible to obtain. The fact that the greater number of its members are resident in the East does not affect the question; possibly if the West had received as much consideration it would not have been so. But it is not an Eastern, nor a Western, nor a Northern, nor a Southern association. It is of the United States, it is National. Its meetings should be equally accessible to all alike. While some have clamored for a session in California, we have steadily opposed it, because it would be manifestly unfair to the Eastern members. Upon the same grounds we shall oppose the far East, the far North, the far South. If some national event should attract the members to a given point, such as the World's Fair in Chicago in 1893, it may be policy to give them the advantage of the dual event; but no extreme policy of arraying the West against the East should be indulged in. Everything for harmony and the welfare of the association, to extend its membership and its influence, to make its meetings profitable and enjoyable, so that those who sacrifice their time and energies in contributing to the programme will feel that they are repaid for their journey and their endeavors—in a word, that it shall be national in truth as well as in name.

Viewing the subject, then, in this broad sense, with no other object than the good of the association, and all who have the honor and high privilege of being enrolled upon its list of membership, we congratulate the Executive Committee upon their wise action, and predict for the convention of 1898 an extended influence, increased membership, and a record-breaking attendance.

KEEP UP THE WORK IN PENNSYLVANIA.

WE much regret to learn that the Pennsylvania State Live-Stock Sanitary Board is in danger of being closed down for want of funds. It had been decided at the end of November to make no further appropriation, but through the appeal of the State Veterinarian and other members of the Board, who showed the great importance of the work now under way, an additional appropriation for three months' existence was secured. The great amount of earnest work which this Board is accomplishing in the Keystone State should not be crippled by such a pessimistic course, as it is saving to the live stock interests many times its cost annually. The percentage of tuberculosis infection has fallen within a short time from 20.2 to 12.2, an item which should guarantee its existence to all reasonable men even as an economic measure.

IT IS SAID that "an honest confession is good for the soul." Our esteemed Philadelphia contemporary has for the past year or two emblazoned the announcement of its own greatness by the standing epigram, "Leads veterinary journalism in America." The veterinary public have ever contemplated this assertion with amusement; but now even its originators feel that they have no right to impose such a statement upon the well-informed profession. The terse little sentence referred to occupied a prominent position upon the stationery employed, even to the envelopes used for transmitting the monthly issues to its subscribers, where it engaged the eye up in the northwest corner. Some six months ago we observed that a broad line of ink from a truthful pen had been drawn through the familiar sentence on the envelope in which our copy was received, and since that date each one has received the same treatment. We thought that possibly the publishers had erased the harmless little emblem from our particular package out of deference to our feelings, but upon examining the wrappers of other subscribers we found that it had been as ruthlessly dealt with. We congratulate the publishers upon this candid acknowledgment, and trust that the effort, though requiring courage, will bring its own reward.

WE HAVE RECEIVED from Secretary William Henry Kelly, of the New York State Board of Veterinary Medical Examiners, a copy of a bill introduced in the Senate by Mr. Wray, read twice, and referred to the Committee on Public Health, the provisions of which are intended to exempt graduates from three-year colleges receiving their degrees before July 1, 1898, from examination by the Board.

THE receipt of a sample copy of the REVIEW is an invitation to subscribe. Join the great body of veterinarians who will read and contribute to the literary value of the Twenty-second Volume (which begins with the April number), and you will wonder how you ever succeeded without it. It is the experience of hundreds, as we are informed through many letters.

SUBSCRIBERS will please bear in mind that the next volume (XXII) begins with the April issue, when most subscriptions are to be renewed. You cannot afford to allow your REVIEW to cease its visits.

ORIGINAL ARTICLES.

INFECTIOUS CATARRHAL FEVER OF HORSES.

By Roscoe R. Bell, D. V. S., Brooklyn, N. Y.

A Paper read before the New York State Veterinary Medical Society, Sept. 15, 1897.

I have adopted this title for a disease, or class of diseases, affecting horses enzoötically in this and other countries, and occasionally existing as an epizoötic and panzoötic, after much deliberation and consideration of the literature upon the subject in the English language, and some translations from the French and German authors, because it gives a clearer interpretation of the character and nature of the varied symptoms presented by the multiplicity of the lesions and complications met with than any of the many names by which it has been described. Almost every author has the same difficulty, and each one adopts a name which he thinks is more in conformity with his observations. Prof. Zuill devotes a page or two to criticisms of its nomenclature, and finally settles upon "Typhoid Fever," which I object to for the reason that the lesions in this disease are so distinctive from the affection bearing that title and affecting the human subject that we should not indulge in any such confusing and misleading caption.

All that group of diseases appearing periodically in sales stables or in large stables after the introduction of one or more green horses, and which bear titles in conformity with the most prominent symptoms—pinkeye, influenza, distemper, infectious pneumonia, infectious laryngitis, bronchitis, pleurisy, pleuropneumonia, etc.—have undoubtedly the same origin, the same infecting agent, and authorities, arguing from the history and clinical observations in such outbreaks, are pretty well united as to what the nature of that agent is, even though they cannot demonstrate its presence.

I take it that this is neither the place nor the occasion to go into a minute description of the history, symptoms *in extenso*, and the concise phenomena connected with outbreaks, nor to burden you with fine distinctions upon any phase of the disease itself; these can be found in the greatest profusion and with the most sacred regard for details in a dozen excellent works in the English language, both as original writings and as translations of the recognized authorities of the world. They can be studied better in the seclusion of our offices and homes, and are doubtless familiar to us all.

I have been led to present this subject to you on account of the frequent enzoötic outbreaks of the disease, usually in the large stables of our best clients, and on account of the extent of its ravages, the alarming symptoms, and the frequent high mortality. I am more anxious to discuss the etiology and treatment of this disease than to describe its symptoms. As to the infecting agent, there is nothing to be learned from the writings of any author in any land, beyond theories of more or less ingenuity, deduced from careful study of the history of outbreaks and the effects upon the system, although the disease has been known and has received much consideration for more than 700 years. The more recent observers are nearly united in the belief that a micro-organism floating in the air at certain times and under favorable conditions is taken into the system through the inspired air, and in susceptible subjects gives rise to a train of symptoms which constitute this disease. No better conditions exist for rendering the air contaminated by these germs than are found in the city sales-stables, especially in the late spring and early summer, and occasionally at other seasons, more particularly in the autumn. When I specify "susceptible subjects" I do not wish to include only young and green horses, although they are, of course, the most easy victims. All veterinarians with experience in treating sale horses will bear witness to the frequency with which they have seen during the prevalence of such an enzoötic outbreak old horses near the close of life become victims of it—"swappers" who have become useless from old age and infirmities through long years of service in the immediate vicinity of the stable where they at last become affected by the "green sickness." I can narrate a circumstance which illustrates this aspect of the subject with emphasis. A large grocery firm of New York City, which employs a large number of horses (some hundreds) were replenishing their stock by the purchase of new horses and the weeding out of the old and unsatisfactory ones, which they intended to sell on a given date at one of the large auction marts of the city, where three or four hundred "green" horses are constantly stabled, and where this disease, with all its variations, is ever present. The stalls in their own barn being fully occupied, the "culls" were transferred to the auction stable about ten days prior to the date of sale; but by the time the day came to show them in the ring more than half of them were affected with this disease, and some of them died.

If very little is to be gained from researches among the archives of veterinary medicine with reference to the etiology of this disease, our inquiries into its curative treatment will be as poorly rewarded—even the modern, up-to-date writers differ as widely as though they were treating of totally dissimilar affections; and if we were to combine the remedial agents recommended by, say, three of them, there would be very few unmentioned drugs in the pharmacopœia. Not only will one writer differ from another, in the indications for treatment, but each one will differ with himself, administering medicines of opposite actions for the same conditions. After describing a typhoid disease, with depression of all vital forces, some administer arterial sedatives, nerve sedatives, bleeding, blistering, and other means of depletion, while antimony, iodine, mercury, saline derivatives, and even purgatives are advised. Opposed to these, the stimulation of quinine is recommended, along with such a wonderful dose as half a pint of alcohol, while another modern writer would advise two ounces of whiskey every twenty-four hours. And so on, if time would permit, I could occupy all the time that should be given to this paper in pointing out the incongruous irregularities in the therapy of these writers. But enough is here given to show that the conception of the etiology and morbid processes is very vague in the minds of modern writers, and, while I have no intention of tearing down their theories—since I have not a new and better one with which to replace them, I will endeavor to outline a system of treatment that at least has the merit of consistency—a system which I have studied very closely and which I have practiced with increasing satisfaction as it has been extended under the stern guidance of practical experience.

There is, I think, in every form of the disease, whether it affects the respiratory organs, the digestive apparatus, the lymphatic and circulatory systems, or the apparatus of innervation, a primary catarrhal infection of the air passages. It, therefore, appears to me that the infecting agent—the undiscovered micro-organism—is taken into the system of the susceptible subject by means of the inspired air, and finally localizes itself upon that organ or organs which offer it the most inviting habitat. I do not agree with Prof. Zuill that intestinal complications are seen in the majority of cases ; but I do believe that the respiratory tract is by far the most selective of the organs, as its involvement is the most serious.

For the past eight years I have had an exceptionally favorable opportunity to study this disease, especially in its clinical aspects, having had the medical care of a large sales-stable, where the usual amount of sickness is present during the entire year, but there has occurred every spring, about the latter part of April or the first of May, an outbreak of what I here term "Infectious Catarrhal Fever." It has always appeared suddenly, and before its nature was realized there would be half a dozen cases, and within a week half the horses in the barn would be affected.

Some would simply have a catarrhal fever, discharging a thin glutinous, often yellowish serosity from the nostrils, eyes half closed, and a watery secretion overflowing the lower lid and running down over the face. Pyrexia is an immediate and pronounced symptom, and only the mildest cases will fail to force the registry up to 106°, while a few will reach or slightly exceed 108°. I learned to place more reliance upon the frequency and character of the pulsations—especially the latter—than upon any other symptom, and prognoses (the most practically-important thing to the practitioner) were always based upon the information gained from that source. In those where an internal organ becomes the seat of the expenditure of the disease, the symptoms are not clearly defined at the outset—the extent of the appreciable lesions being extreme fever, psychical and nervous depression, with general lassitude and inappetence. In various periods from the apparition of the symptoms, varying from a few hours to as many days, we are enabled to proclaim that the patient has the complication of laryngitis, bronchitis, pneumonia, pleurisy, pleuro-pneumonia, enteritis, hepatitis, nephritis, phrenitis, laminitis, or other involvement. It has been my experience that, if the majority are not affected with simple catarrhal fever, the greater number have respiratory inflammations, and of these pneumonia heads the list. The staggering gait which is always present after a few days is no indication that the disease is expending itself upon the nerves, as this is an accompaniment of every one of the complications, a diagnostic symptom being relaxation of the sphincter ani muscle from the loss of nerve force to produce contraction. As the lax condition of the involuntary nerve governing this muscle is so manifest by virtue of its position and function, it is safe to assume that all other muscles supplied by this system are in a like state and hence there is relaxation of the unstriped fibres of the intestines, and consequent irregular peristalsis, resulting in constipation or diarrhœa.

The infecting agent and its means of gaining entrance into the system, are matters of speculation, and all writings to date are based upon theoretical reasoning. As I have no greater knowledge upon the subject, I pursue my conclusions by inference.

An animal located at one end of the stable becomes affected, and the next one to succumb is just as likely as not to be a horse occupying the furthest stall away from the first victim, while his nearest neighbor may never become diseased. This is so frequently the history of an outbreak as to be almost the rule. It leads to this conclusion: That the micro-organism gains entrance into the body by means of the inspired air, and entering by this system the most exposed tissues are the delicate and sensitive structures of the respiratory mucous membrane, producing a catarrhal inflammation, which by extension to continuous and contiguous organs causes the lesions most usually seen and which have been enumerated. If, perchance, these first-attacked organs should prove resistant, the infecting agent, circulating with the blood, fastens itself upon a susceptible organ in some other portion of the body. I have no intention of precluding the possibility or denying the frequency of stasis in the various organs, especially the lungs, from extreme depression of the circulation—due not only to the lassitude of the heart muscles but to the lack of resiliency of the arteries, from deficiency of sympathetic nerve supply, and death at the outset of the attack from asphyxia; nor that the depression of the heart from the severity of the first onslaught may not be sufficient to produce death by asthenia; nor that the same phenomena may not take place within the cranial cavity or the spinal marrow.

But, where the initiatory effects are less pronounced, and the processes go on to localization of the disease in an organ, the attack then settles down to a self-limited disease whose severity is in consonance with the extent of the lesion and importance of the involved organ, which is usually in keeping with the clinical symptoms displayed by the patient.

The observation by the various writers that those animals attacked at the beginning of the outbreak are most seriously affected, has been confirmed in my experience, and that very few of those who become victims as the outbreak is waning have such profound pyrexia or serious lesions is equally true.

The tendency to gangrene is more pronounced in these inflammations than in simple or sporadic inflammations, death from this termination being a frequent result in pneumonia. But often a very alarming symptom occurs during pneumonia in the expired air having a necrotic odor, extremely critical, though not necessarily fatal, as the tainted breath may arise from an infarct which may not be of sufficient magnitude to preclude recovery. Whether absorption of such septic material may not be a prolific cause of death, I am not prepared to say, and I direct your attention to that portion of the treatment recommended in this paper as being directed against this very condition.

I have found fault with the treatment recommended by modern authors, and I have done so because it seemed to me to be irrational; that they have not caused their therapy to keep abreast of their theories. If it be conceded that the disease has for its origin a microbe, efforts to combat it should be anti-microbian, while the effects produced upon the system by the ptomaines of the germ can be best antagonized by appropriate stimulant treatment. I have never seen a case of this disease where I have conceived the idea that sedative treatment was indicated, whether in the operation of venesection or medicinal substances. I have not seen the "bounding pulse," even in plethoric animals, that would indicate a sthenic disease, and I dare say that any subject that could withstand blood-letting, doses of aconite, veratrum veride, antimony, mercury, iodine, purging, and mustard to the sides, belly, and legs, would recover much more rapidly if it received more humane and rational curative treatment.

At the outset, when the pulse is rapid, the temperature high, the animal listless, the appetite destroyed, when no local lesion has yet made itself manifest, the indications, in my judgment, are to fortify the system against the tendencies of the disease, and to attack the cause which is producing it, thus encouraging the localization to take place upon the lesser vital and fatal organs. With this idea in view, the animal's chest is placed in an oiled-silk jacket, which produces a copious perspiration upon the sides and undoubtedly causes a determination of blood to this external surface; the legs are thickly bandaged with warm woolen bandages, which in turn stimulates the circulation in the extremities, keeps up an equalization of circulation and body temperature, and is thus an effectual antagonist of *stasis* in internal organs. To assist this action, there can be no objection to the early and regular exhibition of reasonable doses of alcohol, to dilate superficial capillaries, especially those of the cutaneous apparatus, stimulating the heart and general circulation, thus assisting the efforts to relieve congestion or tendencies toward congestion of internal organs. For antipyretic medication, there seems to be no drug superior to quinine, which not only does not produce its physiological action by depletion, but by stimulation, and it is possible that there is no internal antiseptic or disinfectant superior to it. The investigations of Prof. Bangs upon the antimicrobic properties of quinine are very grateful when considered in such a connection as this.

During the progress of the disease if fever reaches a dangerous altitude and does not respond to antipyretic doses of quinine, if its reduction is deemed imperative, resort to two drachms of acetanilid and half a drachm of the fluid extract of digitalis, every six hours, will often yield the happiest results, the result being a marked lowering of temperature and pulse, with brightening of the spirit of the patient and desire for food, to relax into the former condition when the system emerges from under the influence and the temperature ascends to its former ratings, which I have found occurs at about the end of six hours.

If symptoms occur as the disease progresses which indicate failure of any of the vital functions, they can certainly be best combatted by the administration of appropriate stimulants, since the tendency of the symptoms from the onset are those of depression and exhaustion. The lowered vitality of the nerves, manifested by the weakened sphincter ani and the muscles of locomotion call loudly for stimulation, and it would appear that sedation was the contra-indication in every phase and stage of its progression.

I direct your attention to *disinfection of the lungs* as in direct support of the modern method of treating infectious diseases.

Previous to practicing this method, the mortality from this disease had been as great with me under one form of treatment as with another; but upon the early exhibition of warm water heavily impregnated and vaporized with antiseptic and disinfectant medicinal substances, improvement was rapidiy observable, and during the last outbreak this was administered from the incipiency of the manifestations until the animal was a safe convalescent.

For the purpose of lung disinfection a special apparatus has been constructed—simple, cheap, and effectual. It consists of an upright cylindrical vessel, perforated with ventilating openings, to the side of which is attached an insulated handle. In this vessel is placed an alcohol lamp, which heats a bowl containing the solution to be vaporized, and to the top of which is screwed a brass exhaust tube, from which the steam is rapidly evolved. When the steam begins to escape from this tube it is held at a distance of about eight inches from the patient's nostrils and is allowed to play constantly, becoming in traversing this distance sufficiently cooled for respiration. With each inspiration this anti-microbic vapor is inhaled—directly into the most minute ramifications of the bronchioles and air-cells, and through the lining membrane into the blood current, where it circulates in the same manner as the oxygen, which is taken in simultaneously. The choice of a disinfectant may be in accordance with one's preference, but I have found it best to employ one which is not offensive nor nauseating. I have thought that Sanitas Fluid—not the crude—in the proportion of a tablespoonful to half a cupful of water acted best, being sufficient for one inhalation, requiring ten minutes, and repeated twice daily. Vapor of peroxide of hydrogen, carbolic acid, creolin, weak solution of bichloride of mercury, etc., may be preferred by some.

Upon the same principle hygiene of the premises is of paramount importance, isolation of the affected animals imperative, and the perfect disinfection of the stable by means of chlorine or sulphurous acid gas, washing all walls and floors with carbolized water, having been previously scrubbed with water impregnated with carbonate of soda.

Prof. Trasbot, of Alfort, has made mention of the turning into the open air of affected animals, and Prof. Zuill has seconded it. Some five years ago, before the introduction by me of disinfection of the lungs, I had under treatment in one stable some ten horses whose condition did not improve, despite every effort to bring about convalescence. The appetite was absolutely negative, and the fever continued a high rating. In desperation they were blanketed lightly, turned into a pasture lot of luscious clover, and left out day and night, with the result of recovery in every case, although two or three had been considered as beyond that possibility. This can have no greater significance than emphasizing perfect hygiene, which means perfect air for respiration.

I have observed a number of cases of lung complication which would approach the brink of dissolution, with hydrothorax, relieved by paracentesis thoracis, make patched-up recoveries, never regaining robust constitutions, and rendered susceptible to relapses, some dying from a renewed complication, due to the lowered vitality of all important functions.

I have already taken up too much of the valuable time of this session, and, although I should be glad to further discuss this important malady, with a consideration of its various complications and the treatment found best suited to each condition, I must desist.

TUBERCULOSIS AND ITS RELATION TO THE VETERINARIAN.

By C. W. Fisher, Class of '98, Ontario Veterinary College.

A Paper read before the Veterinary Medical Association of that College.

Tuberculosis in general is too broad a subject for consideration in a paper of this kind. We will, however, endeavor to consider a few of the points of special interest to the veterinarian.

Being a topic of much general discussion at the present time every veterinarian should become as familiar with the subject as possible. As so much has been written and published on tuberculosis in regard to its history, etiology, and pathology we will pass hastily over these and consider more carefully a few of the important points of interest to the veterinarian.

Tuberculosis is an infectious disease caused by the bacillus tuberculosis, characterized by the formation of tubercles in the various organs of the body. It is common to man and all animals. It is not a new disease, in fact, Hippocrates, 400 years B. C., described abscesses and ulcers of the lungs, which characterize the disease of to-day.

This paper will consider bovine tuberculosis principally, as it is of the most importance to our profession; bringing in that of the other animals only in relation to this. Bovine tuberculosis is of long standing in European countries, but is comparatively new in America. It was brought here in cattle imported for stock purposes and has gradually spread from the stock-farms throughout the country. Within the past few years, through the cheapness of transportation, and the desire to improve their herds, people have exchanged cattle much more than formerly, purchasing especially from these infected stock-farms. This has caused the disease to spread very fast; thus giving some people the idea that it is a new disease, while others think it has always existed in our herds.

It does not originate spontaneously, however poor the management of a herd may be. A veterinarian should acquaint himself with the predisposing tendencies, also the laws of breeding, so as to enlighten a client who may seek his advice and services. There is much in breeding that will act as a preventive to this and other diseases.

Bovine tuberculosis, being so insidious in its character of development and affecting any of so many various organs of the body, is a very hard disease to diagnose by physical examination alone. It is, however, important for a veterinarian to be familiar with a few of the general symptoms, some of which may be recognized in well-developed cases. First, there may be a dry, hoarse cough, especially in the morning or when the animal is exercised; upon auscultation the different râles and crepitation may be heard, or the lack of normal sounds. In advanced cases crepitation may be felt by carefully placing the hands on either side of the thorax; the animal will now have a general unthrifty appearance. There may be enlargement of any of the lymphatic glands, such as the supra-mammary, inguinal, prescapular or retro-pharyngeal; also the udder may be affected. The appetite may be abnormal until late in the development, when it will gradually diminish and the animal will emaciate quite rapidly; there may also be present a chronic diarrhœa. The cough and respiratory symptoms will now be exaggerated and the animal will have a hectic fever of from 1° to 3° F.

Many of the preceding symptoms may be present and yet the veterinarian is not certain of his diagnosis of tuberculosis, as other diseases may give similar symptoms. The most common disease which the veterinarian may mistake from these symptoms for tuberculosis is chronic bronchitis, but with this there is usually more discharge from the nostrils.

The tuberculin test is of the greatest value in diagnosing the disease. It consists in the subcutaneous injection of a small quantity of tuberculin; the taking of the temperature before or at the time of injection, also during the period of from 10 to 20 hours after injection, and the noting of physical as well as temperature reactions.

Tuberculin was first used as a diagnostic agent in veterinary practice in 1891 by Prof. W. Gutmann, of the Veterinary Institute, Dorpat, Russia; in America by Prof. W. L. Zuill, of the Philadelphia Veterinary College. It is a glycerine extract of tubercle bacilli. Tuberculin is prepared by growing pure cultures of the bacillus in serum or other suitable media until highly concentrated. Glycerine and carbolic acid are then added, and the whole passed through a porcelain filter to remove the bacilli, after which the liquid is heated for a time to kill the germs, if any are present. The liquid is then concentrated by evaporation in a vacuum until of the proper strength.

The temperature reaction is explained by Gamabia in this way: The toxines of the tubercle bacilli in the tuberculin has a poisonous action on the elements of the tubercle, causing necrobiosis. The ptomaines resulting from the decomposition of the elements excite a local exudative inflammation and leucocytic infiltration. This local reaction results in the breaking up and elimination of the tuberculin foci. The febrile reaction must be attributed to the absorption of the necrosed tissues.

The Koch tuberculin is usually diluted one to ten in a one per cent. solution of carbolic acid and about 2 c. c. or 30 minims given to an ordinary adult animal. The United States and Canadian governments each prepare it ready for use, but varying a little in the strength and dose. The size of the dose must be regulated for the condition, age, and sex of the animal. Adult males usually take a half more than females; very old animals more than medium; suspicious advanced cases should get a much larger dose; also retests within a short time should get a double dose.

Tuberculin is injected with an ordinary hypodermic syringe under the skin on the cervical, or just posterior to the scapular region, care being taken not to inject into the large lymphatic glands. Some directions give instruction to shave and disinfect the parts before injecting, but many of extensive experience say this is unnecessary. Unfavorable results so seldom follow that it will hardly compensate the trouble, unless it is a herd which is unusually filthy or has some other disease present at the time.

The temperature must be taken once, and better two or three times, before injecting, especially if the veterinarian is not thoroughly acquainted with the work. The time of injection makes no special difference, but much clearer reactions will be given if the test period comes early in the morning, when the animals are quiet and the diurnal variation is the lowest. From ten to twelve hours is the usual time given before the temperature is taken, then once in two hours until eighteen or twenty after the injection. If the injection is very early, one can wait as safely twelve hours as ten if a late injection is made, as the reaction seems to be a little quicker if the animal is up and feeding. Occasionally the reaction will not reach its height until nearly twenty-four hours after injection, hence the necessity of varying the time according to the herd. A very close watch should be made of any suspicious animals during the test period, as they usually show physical symptoms with the reaction. Some advanced cases give no temperature reaction, and then the veterinarian has to rely wholly upon physical reaction and symptoms Animals may have a high temperature from other causes than the tuberculin ; some of these are advanced stages of pregnancy, slight septicæmia following parturition, mammitis, laminitis, period of œstrum, indigestion from either over-feeding or feeding on straw and coarse foods, improper ventilation of the stable, sudden change of atmospheric temperature. During the test the animals should be fed as usual, but no water should be allowed, as it may cause alterations in temperature at any time.

As there are so many irregularities which may complicate the testing no hard and fast rule can be laid down for the amount of reaction to condemn an animal. The experience and sound judgment of the veterinarian is required to interpret the tuberculin test in many instances. It is from the want of these two qualities on the part of the person making the test and not the tuberculin that is the cause of so many reported mistakes. The tuberculin test will never be considered as reliable, nor can it hold its present good standing as a diagnostic agent if applied by the farmers themselves.

After condemning an animal with tuberculosis the veterinarian must in most cases verify the diagnosis by post-mortem examination. The owner of the animal usually removes the hide for its value ; after which the veterinarian begins the autopsy. It is well to have a regular route for such work, especially if there are hundreds of spectators. A good method of procedure is something in this course :

First.—Support the carcass on its back.

Second—If a cow examine the udder, supra-mammary glands and remove.

Third.—Cut through sternum and linea alba, also abdominal muscles transversely.

Fourth.—Examine peritoneum, omentum, small intestines and mesenteric glands, remove abdominal portion of alimentary canal and examine lymphatic glands on the stomach.

Fifth.—Remove liver and hepatic glands, examine uterus and kidneys.

Sixth.—Cut diaphragm and remove thoracic portion of trachea, lungs, and heart; and examine lungs, bronchial, and mediastinal glands.

Seventh.—Lastly examine prescapular and retro-pharyngeal glands.

It would require too much time to describe the pathological appearances; furthermore we are all more or less familiar with the descriptions. I will, however, speak of one form of the disease which may cause some one trouble; that is what is known as infiltration of tubercle. In this case the characteristic nodule or tubercle is not found; but there is a diffuse inflammation through the organ affected, giving it an indurated feel. Upon microscopical examination numerous collections of cells may be seen, something similar to the beginning of a tubercle.

As bovine tuberculosis is of the most importance to the veterinarian, I will only briefly speak of it in other animals. Of the common domesticated animals, the hog is perhaps the most subject to the disease after the ox. Quite often they are affected when the cattle are badly diseased. Tuberculosis runs a much quicker course in hogs and port-mortems show more of the softening and very little of the calcareous stage. Horses are occasionally affected; when seen it is usually more advanced in the intestines than lungs. Hens and dogs running in the barn with a badly infected herd, sometimes contract the disease. Tuberculosis is very destructive to menageries of caged wild animals.

In closing let us remember that the time is soon coming when there will be a more rigid examination of neat and beef cattle here in America; it therefore behooves us as young veterinarians to become thoroughly acquainted with tuberculosis, as well as other contagious diseases, in order to compete for appointments.

ELECTRICITY FOR STRICTURE OF THE TEAT.

By J. J. Drasky, V. S., Crete, Neb.

Read before the Nebraska Jersey Breeders' Association, Dec. 2 1897.

Stricture of the teat is a thickening of the mucous membrane, and a partial or complete closure of the milk duct, the result of mammitis or an infection setting up inflammation of the mucous or lining membrane of the milk duct, excoriation of the same and a deposit of fibrous tissue or cartilaginous material. If the stricture be localized in either the superior, middle or inferior portion of the milk duct, the treatment is simple, and therefore I shall only speak of a general stricture, a stricture that is considered by some of our best authorities unavailable to treatment. In the treatment of a general stricture the result desired is the absorption of the cicatricial tissue. The modus operandi is to introduce, into the duct, an electrode about a size larger than the stricture will admit, insulated to the tip.

The electrode must be soaked, not oiled, it being a non-conductor, for the purpose of lubrication and to facilitate its introduction. The electrode is to be attached to the negative pole of the battery. The circuit is completed by a broad sponge rhephore moistened with salt and water and placed on a convenient part of the body of the patient. I would not advise a current stronger than from seven to eleven cells. Keep the olive pressed in contact with the stricture, but do not force, and you will have the satisfaction, in a few moments, in finding that the duct has dilated, and that the electrode slips with facility. This completes the operation, which may be repeated as often as deemed necessary at intervals of a few days. It will be noticed that I have laid great stress upon the use of a negative pole. This is quite necessary, as the use of a positive pole easily produces an eschar, which heals by contraction, and so, instead of curing a stricture, will actually cause one.

About two years ago I was called on by S. R. Foss to treat a thoroughbred Holstein cow on his ranch, situated about one hundred miles west of here. It being in the spring of the year, my practice did not permit me to leave home for the length of time required to make the trip, but as the symptoms were so plainly described, I knew I had a case of acute mammitis, and prescribed the usual line of treatment. Mr. Foss boarded the train and personally superintended the treatment of the animal. After the inflammation had subsided, it was noticed that there was some obstruction in one of the teats. The animal was at once shipped to this place. I was called and found a stricture extending the whole length of the milk duct. After consulting the different authorities, among them Dr. James Law, of Cornell, of the Bureau of Animal Industry, I had but little hopes, but in some way mentioned this case to Dr. J. B. Foss, M. D., who proposed electricity, and kindly offered me the use of his text book and also his battery. With his assistance I operated and used a seven cell current. We operated three times at intervals of a week, the result being a complete cure.

I take this case for an example because the stricture was so complete that it almost closed the duct, the stream not being as large as a pin, the flow of milk had diminished to less than a teacup. To-day that lobe is as active as any of the others and milks fully as easily. I have since operated on six other cases and had, with all but one, the best success. The case on which I failed was of two or three years standing, and it being out in the country I operated only twice and then neglected it. Had I been attentive, possibly even in this case the result might have been favorable.

NOTE.—It will be well to note that I cast the animal, and once more to caution the operator not to use too strong a current, as the age of the fluid, carbon and zinc, has a great deal to do with the strength of the current. I would suggest that the operator apply the olive first to his tongue so as not to have the current any stronger than he can bear. The experience of Dr. Foss and others tell me that the major portion of the failures in the treatment of an urethral stricture is traced to too strong a current being used, still they have the advantage over us that they can consult their patient as to the strength of the current. As the main point is to avoid any production of pain, therefore we must first test the strength of the current ourselves.

EUROPEAN CHRONICLES.

By Prof. Liautard, M. D., V. M.

New Lesions in Glanders—Tracheal, Renal and Testicular Lesions.—It is very singular that with all that has already been written and all that is known of the morvo-farcinous affections, there should yet remain new discoveries in relation to some part of their history. That the lesions vary considerably in their appearance or locations are facts already well known, and the microscopic traces of the glanderous viruses, in their various forms, have already too often been described, and are sufficiently well known. Such were the facts in two very important cases reported by Prof. Nocard at one of the meetings of the Société Centrale.

In the first it was a horse which was affected with violent attacks of coughing, accompanied with vomiting efforts, when pus, mixed with striæ of blood, were thrown out. The animal had lost considerable flesh and was quite feverish. On this account the suspicion that morve existed could not be confirmed with the malleine test; but an examination of the matter thrown off revealed the presence of the germs of glanders. The animal was destroyed, and at the post-mortem examination the lungs presented multiple lesions of glanders. And, besides these, one which so far has not been described; it was a true farcinous lesion.

A large cord extended alongside the whole course of the trachea, on its posterior face. Thick and in some places larger than a man's finger, it presented here and there dilatations or pouches, true collections of pus, which had ulcerated through the tracheal mucous membrane, and permitted the escape of their contents in that canal, to be expectorated during the acts of coughing. At the posterior end of the trachea near the bifurcation of the bronchia, this cord presented a much larger cavity, with several openings directly in communication with the tracheal cavity.

This very unusual lesion of morvo-farcinous diathesis is certainly very interesting, and the fact of its presence indicates the necessity of its discovery in other forms of the same disease, especially in those where pulmonary lesions might be absent.

Indeed, it is known that, though the lungs seldom escape being the seat of lesions of glanders, it is not rare to meet confirmed cases of this disease, which at post-mortem exhibit lungs apparently free from the ordinary forms of tubercles of a glanderous nature. And this even in cases of acute nature.

Dr. Nocard again recorded a case of much interest in relation to this—a post-mortem examination of an animal which had been destroyed on account of a very acute form of glanders, and had extensive ulcerations of the mucous membrane of the septum nasi; he had carefully examined the trachea and the lungs and failed to discover any indications of a glanderous nature. In continuing the autopsy, however, he found in the kidneys new formations of quite large dimensions, and also a similar one in one of the testicles. This, however, contained a small purulent collection. The true nature of those renal and testicular lesions was demonstrated by inoculations on guinea-pigs and by cultures. They were of glanderous origin.

* * *

MALLEINE AND TUBERCULINE.—There is no longer any doubt as to the diagnostic value of these tried preparations. Their action and their effects upon suspicious animals are now too well demonstrated, and even if new discoveries fail to add to their value, their respective actions upon individual suspicious animals may prove of the utmost importance to the daily practitioner.

This is illustrated by one animal whose post-mortem I will have an opportunity to witness when the patient now at Alfort is destroyed.

The history of this case is as follows: He had no other symptoms of glanders than that of a peculiar enlargement of one of the maxillary glands. Not painful, quite large, somewhat bosselated. Submitted by veterinarians to three successive malleinations, he came out immune at every one. The gland was extracted, and with it inoculations were made, which were also negative. Evidently the horse was free from glanders. He was then conducted to Alfort for examination and when submitted to the test of tuberculine reacted. He is now affected with tuberculosis, and will soon be destroyed.

Previous to the day of malleine and tuberculine, the diagnosis could not have been positively established.

* * *

The Treatment of Purpura by Serotherapy has made great progress in France, and the successes that are recorded have a tendency to prove beyond doubt that all the old ideas of the nature of the disease and the numberless forms of treatment that were recommended must be abandoned to make room exclusively for the new treatment by the serum. In the United States, a few practitioners have already recorded the trials that they have made, the results have generally been satisfactory, and from what we hear and have seen here we can give our friends in America the advice to lay the strychnia, the coffee, the alkalies, the mineral tonics, etc., aside to have recourse to the serum treatment.

[*Translated from Le Temps.*]

LIGHT AS A BACTERICIDE—PHOTOTHERAPY.

By H. deVarigny, Paris, France

"No one fears light," said Schiller, "except criminals and bad spirits." It is acknowledged that criminals are afraid of broad daylight, and that spirits like darkness; even those that are familiar with spiritualists prefer darkness, for reasons that they cannot tell. But the enumeration of the poet remains incomplete: microbes must be added to it. True, in Schiller's time, microbes were not invented, and he must on that account be forgiven.

Microbes strongly fear light, and especially the natural, that of the sun; it is injurious and often fatal to them. This point is proved beyond doubt by numerous researches due principally to Arloing, Duclaux, Buchner and Koch. And if these microbiologists had not discovered this fact during the last ten years, it would have been brought to the scientific world by a butcher who, some three years ago, discovered it in the following way: This gentleman, an American, in October, 1894, wrote to a well-known transatlantic bacteriologist, Mr. George Sternberg, to inform him that he had gathered a number of facts indicating a well-marked curative effect of the solar rays. Among them the most remarkable and the most suggestive was the rapidity of recovery in wounds and ulcers treated by the simple exposure to sunlight. This let us mention only in passing.

As to the action of light upon pathogenous microbes, it has been studied in a sufficiently and repeatedly exact manner to prevent the slightest doubt as to the injurious influence that it possesses. It is marked to such a degree that Koch has been permitted to say and demonstrate that an exposure to the sun of several hours, or of several days at most, was sufficient to destroy the virulency of the bacilli of tuberculosis—the bacilli of Koch; and this general fact has been observed of other microbes, though naturally variations in the intensity of the action of the light may be observed according to the nature of the microbes, their general condition and other various circumstances.

Such being the case, it seems that light may have some therapeutical influence; and that there is reason to consider a new method of treatment, whose well-indicated name is phototherapy. In fact, phototherapy exists—even for some time back, under certain known or ignored forms, negative as well as positive.

As negative form of phototherapy must be mentioned, that made known by a Danish physician, Niels Finsen, some three years ago, who thought to treat variola with red light. Red light is one of the elements which coöperate in the formation of white or colorless ordinary light. Let a sun ray fall and pass through a prism and it will appear enlarged, divergent and divided in monochromous rays, which are the colors of the spectra: purple, indigo, blue, green, yellow, orange and red. Red light is then ordinary light free from the other colors except the red. It is obtained from the spectra. And it is in that way that it is obtained for experiments in physics. But it is also obtained, with less purity, in passing ordinary light through red glasses, red stuffs, etc. Mr. Finsen has, then, utilized the red rays in the treatment of variola.

Why these rays rather than others?

Because they have less chemical action, as it is known by photographers. Red rays have no specific action towards variola, but they constitute a light where, with purely luminous rays, there is but a very weak proportion of chemical rays, which are most numerous in the purple extremity of the spectra and even extend beyond it in the ultra-purple. Chemical rays are irritating and their irritation interferes with the healing of the eruptive buttons of variola. They can be eliminated either in the suppression of all light or the removing from the light of the part which contains them.

The suppression of all light has often been utilized and history records that the mother of St. Catherine of Sienna nursed her daughter in a dark room "where no draught of air or a ray of light could penetrate," so as to preserve her beauty against the marks of variola. In our days, without going so far as complete obscurity, attempts are made to obtain similar effects by covering the face with masks or opaque substances. But often the results are not considered as very satisfactory.

As to the filtration of the light by substances which arrest the rays with irritating chemical action, those which, theoretically, are injurious, it is obtained in the method of Finsen by the use of red glasses which permit only the passage of the rays of the red extremity of the spectra and arrest all the chemical ones. Of the method, Mr. Finsen speaks highly. Tried at the hospital of Aubervilliers, four years ago, under probably defective conditions, it has not given very successful results. The method has also been experimented with in New York.

However, this negative form of phototherapy was used years ago. At the beginning of the 14th century the beds of variolar patients were often covered or surrounded with red draperies; this color being probably considered as having the mystic power of chasing the disease.

A positive form of phototherapy is offered to us by the recently invented method of the treatment of lupus again by Finsen.

Lupus is tuberculosis of the skin, local, superficial and rebellious to treatment. Existing through the life of the tuberculous bacilli, those are difficult to destroy.

Light killing microbes, Finsen has demanded it to do what antiseptics have so far been unable to.

But, while in variola it was necessary to use negative therapy by removing the irritating properties of light, in lupus it is precisely rays having these properties that must be used. In one case the light must be attenuated, in the other it must be increased.

As the chemical rays are those which, no doubt, have the bactericide power, it is evident that to act on the bacilli of lupus, the chemical rays must be used in preference to entire white light.

Anyhow it is as easy to arrest, by appropriate media, the rays of the red extremity of the spectra as those of the purple extremity. Mr. Finsen has then filtrated his light, solar, or electric, through a solution of blue of methylene, or of sulphate of copper; through this solution the blue-purple rays alone pass, the others, from the green to the red, are cut off. This understood, the method of Mr. Finsen is easily explained: the patient is seated facing a filtrating apparatus; the rays oozing from the filter are turned on the diseased region, which receives a bath of light. Using electric light, in preference to the sun, Mr. Finsen, after isolating the chemical rays, concentrates them with a lens. These purple light-baths last at least two hours, and the treatment is applied during several days, or several weeks, according to the cases. The spreading of the lesions is arrested and recovery goes on by degree. Applied only for the last two years, it is rather early to decide as to the value of the method, but the results so far obtained are very encouraging.

It seems, however, that it would be worth while to apply the positive method in cases of variola, instead of the negative. Because, if the chemical rays can irritate the skin, as it is certain they do, it is also very probable that they would act upon the microbes of the vesicles, either close or open, and perhaps have a beneficial action. It is a question to study. As in both cases, the microbe is there, and it appears contradictory to allow it to grow in one case and to remove it from the active part of light by exposure to it in one case and destroy it in the other.

A point which is interesting to consider is the indirect character of the bactericide action of light. Whether it is the whole or the partial light represented by the chemically active rays, this action upon the microbes is not direct. It is indirect, as proved by Duclaux, d'Arcy and Hardy. The researches of the two last named, indeed, show that the antitoxic action of light takes place only in the presence of air. It seems, then, that the chemical rays operate in giving rise to a reaction which has for consequence the formation of oxygen or perhaps of ozone, and then a slow oxidation. At any rate, the bactericide rays are precisely those which promote the formation of an oxidizing substance, as can be seen with the tetramethylparaphenyldiamined reacting paper, which does not change color except for the rays between the green-blue and the ultra-purple. And this is confirmed by numerous experiments which show that the destruction of bacteridies by light is accompanied by a consummation of air. Altogether, then, light or the chemical rays would kill bacilli in slowly burning them with oxygen.

An ignored or rather unknown form of phototherapy must also be mentioned in the beneficent action of light on the whole organism. It is thus that fine weather is useful to health, that sun baths in the country, on the seashore and where the skin is more exposed to luminous rays. This stimulating action is not doubtful. Two Swiss experimenters have recently tried to prove it, and MM. Kronecker and Marti have had no trouble to show that rats kept in darkness have less red corpuscles and hæmoglobine than those exposed to light, and also that rats living exposed to light night and day had more than ordinary animals submitted to ordinary conditions. But they have also shown that one must not be more royalist than the king, as the continued effect of light wears out. They say: "The noise of the factories (electric plants which lighted the rats during the night) interfered perhaps with the advantageous effect of light." This is possible, but I would rather believe that beyond a certain point the artificial excitation of light will cease. Alternating from good light in daytime to favorable darkness at night, seems to me better.

There is a serious result to be obtained from phototherapy. The American physician was right when a few years ago he proposed that every house should have on its roof a glass *solarium*, heated and lighted by the sun, where each one could go when the sky was clear, where children could be exposed to sunlight when circumstances would not permit outdoor exposure. Light is an exceptional agent of health; it plays one of the most important parts in life; it is a disinfectant of the first order, and let us have our doors and our windows widely open to pure air, to the light of the day, for us to be healthy, and to kill the microbes.

THE advent of the Tammany Hall dynasty has thrown all the veterinarians holding city positions into a state of trembling excitement, as they hourly anticipate the incision of the inevitable political axe into their cervical region. Efficiency in office has no bearing upon political affiliation.

REFLEX PARALYSIS, OR PARALYSIS FROM INDIGESTION.

By DR. J. G. PARSLOW, Marshalltown, Iowa.

A Paper read before the Iowa State Veterinary Medical Association, Jan. 13, 1898.

Is reflex paralysis a proper term, or is it a misnomer?

To argue this question, it will be necessary to offer a definition of a reflex act, and I think the following a very good one:

Definition.—Involuntary movements, or actions due to an irritation, which was conveyed to the spinal cord by afferent nerves, and was reflexed directly upon the efferent nerves, without intervention of consciousness or direction—(KEATING).

Accepting this as a definition for a reflex act, will the same apply to what we call reflex paralysis? I will speak of the different cases of paralysis as we meet them and that are said to be reflexed as a result of indigestion. I will first take paralysis of the bowel, which has really been an enigma to me, from the fact that paralysis, as secondary, occupies the primary seat of irritation and is classed as reflex paralysis, and all reflexed paralysis as symptoms. Now, if reflex paralysis is a symptom, as our authors say, here is a case where the symptoms reach an aggravated form of the disease and require primary attention, the disease only secondary.

Again, this case differs from others, inasmuch as the afferent and efferent nerves both suffer directly in the process of indigestion before the so-called reflex act produced paralysis. We can hardly say this in other cases we have to contend with. In a case like I speak of here we first have indigestion; the result is malnutrition, or, in other words, starvation of the nerve endings, and over a graded course we find this condition until we have complete paralysis. This does not appear to me as a reflexed act, for in all other so-called reflexed acts, where the seat of irritation is in the vaso-motor system, the reflex is shown by paralysis of the motor system. Now, as a result of indigestion, where paralysis of the bowel follows, we have two distinct conditions that may be presented and worthy of notice: One will show pain as the result of impaction anterior to the paralyzed portion of the bowel, while the other will present a sleepy, listless, semi-conscious condition ; locomotion impaired and free from pain. Both of these cases have the same cause, "indigestion." Both the same condition as regards the bowel "paralysis," but showing a marked difference on the nervous system. Can those two cases be satisfactorily explained by the reflexed theory ?

We will take the definition of a reflexed act, and it distinctly states that nerve force must be reflexed, as is conceded, and quite easily observed by pricking a horse without his seeing the same ; the result is that motor power is increased. In reflex paralysis, is there anything reflexed, or is it not simply a loss of functional activity ?

With the latter view, I will go back over part of the ground, and taking the nerves presiding over the bowel, impoverished as the result of indigestion, we will notice that by degrees those nerves have been losing their function and that at no time has any great change taken place, but by a very evenly graded course they have gone on losing little by little of their function, until at last they are completely deprived. Now, to say that at the last moment we must have a reflexed act to obtain this result would appear largely imaginative and very complex, if not misleading.

It has been demonstrated that we can have a reflexed act produced through the medium of the lower nerve centres, the higher centres being acquainted with the fact later, as an intelligence only. In this same way we can have paralysis. When the nerve ending becomes so impaired as to lose its function, that function may only be lost to the first lower nerve centre, and in turn it may extend the loss of that function from one of these lower nerve centres to the other and so on to the highest nerve centre, and as such communion does exist as to use this lower centre as a transmitter or medium of exchange, whereby the force coming over one set of nerves is directed to the other, it is not to be wondered at that one or the other set of nerves leaving that centre have their function impaired, even to cessation of function and paralysis. This would not be a reflexed act, according to the definition. The theory that I wish to advance and the one that bears me out in my practical experience, is this, that all those nerve centres, both high and low, are equalizers of nerve force. This, of course, is an automatic act. Nevertheless, it is a well understood fact, that during the exercise of any one particular function, all others are comparatively at rest. This would show that all, or nearly all, the nerve force coming to one of these nerve centres was being directed and consumed through that channel performing the greatest function. This point shows me, and bears me out in my experience, how we have paralysis of the motor nerves in one case and of the vaso-motor in another, both from the same pathological condition and without a reflex act.

If we take a patient troubled with indigestion and place that subject at perfect rest as regards motor power, let indigestion progress, and the result is more nerve force is required to perform that function, and so on until all or nearly all the force coming through that lower nerve centre has been directed to the bowel, in response to the irritation, leaving an insufficient amount to control motor power, of course paralysis of the same to a greater or lesser degree, depending upon the severity of the case, is the result.

The fact that no stimulus existed in the motor system to direct nerve force in that direction, and on the other hand an increased amount of energy was being called for in digestion until it almost habituated itself to that channel and at the expense of the motor would seem as though there could be no other ultimatum.

Now, we will reverse this order of things and with the same kind of patient, but ask of him a fair day's labor each day, and we know that the nerve force is being largely consumed through the motor system. The bowel is comparatively at rest. The greatest stimulus now exists in the motor system and the result is paralysis of the bowel. When an insufficient amount of force is being received at these centres to comply with the wants of the different functions, the one with the greatest stimulus will receive all, the other will lose its function. If this theory be right, there is no reflexed act, but let us apply this theory to cases cited in this paper and see how it will work.

The first one, a case of paralysis of the bowel, with pain as the result of impaction. This one has already received an explanation, with the exception that my experience in all cases of this kind goes to show that it has been brought about during the period in which the animal was performing some sort of labor, and nerve force being largely consumed in motor power.

The second case is a much more complicated one. Indigestion has so impoverished the system generally, that there is not being sufficient nerve force generated to supply the wants in full of any one function, less a set of functions. At this stage, labor is demanded of our patient, and by borrowing from all other functions, there is sufficient to last but for a short time. Digestion has given up all it can without death, portious of it having ceased to perform a function, the rest receiving but a very light stimulus, labor is continued and we soon notice a dullness, motor power is no longer being conducted automatically, there is not sufficient force generated to allow for a reserve, which is the life of the higher nerve centres, as well as the means by which it is conveyed to all parts automatically. The loss of the reserve must cause partial paralysis to the brain, and an insufficient amount being generated, even when directed to motor power, to perform that function in full, locomotor ataxia would be the result.

You are all well enough acquainted with the cause and effect of indigestion, therefore I have omitted touching on that point, and only give my ideas as to how the effect is produced, a point not yet satisfactorily solved.

REPORTS OF CASES.

"*Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science.*"

PHLEGMONOUS ERYSIPELAS.*

By JOHN L. TYLER, M. D., D. V. S., Chebause, Ill.

Cellulo-cutaneous or phlegmonous erysipelas is a disease in which the skin and subcutaneous connective tissues are alike affected. It is to-day a generally accepted theory that its occurrence is due to a specific germ, and, while I made no microscopical examination in the case I am about to report I am satisfied from the development of the severe constitutional symptoms that I had a true case, and not a case of septic infection, which, if developed from this cause, would be due to the development and absorption of ptomaines, which result from the death of tissues upon being burned, for I consider the cause in the following case to be practically the same as a burn, although produced by a blister, supposed to be composed of cantharides, although the exact composition could not be learned, as the party who prescribed it for another horse had left town about two years previously, since which time it had stood untouched in a tin can until resurrected for its present use.

The disease is disseminated throughout the system through the agency of the lymph canals and spaces, and predisposes to localize in a collection of glands of the same order. The case in point occurred in a standard bred stallion, three years old, in prime condition, and possessed of extra life; had been in training about two months, and was showing well, when he strained his right-front ankle in making the short turns of the track over which he was being worked. He was accordingly laid up, and, after due consultation with the trainer, the owner, on Tuesday, August 17, applied a blister of age and constituency as before stated. No effect was noted until Sunday, August 22, or about five days later, when upon being examined by the owner the ankle was seen to be swollen quite severely, the swelling extending nearly to the knee. No attention was paid to his condition, however, other than to remark that the blister was working quite freely.

Tuesday, August 24, I was called, and found the patient very sick; leg badly swollen, respirations accelerated, pulse rapid, temperature 106½°, skin around the ankle white, denuded of hair, and quite fœtid. The skin could be scraped away from the flesh with the thumb-nail with ease. He moved with difficulty and stood with drooping head in one corner of his box.

---

* Read before the Illinois State Veterinary Medical Association, at Chicago, November 3, 1897.

I gave him a prescription, composed of quinine, tr. chlo. ferri, whisky, tr. aconite, and fl. ex. belladonna. Locally I applied a lotion composed of raw linseed oil, containing 5 per cent. of carbolic acid and 2 per cent. of formaldine solution, to be repeated three times a day very lightly with the hand, as the entire skin covering the ankle could have been stripped from the flesh with the least pressure.

August 25.—Patient in same position, remained standing, as he did during the entire course of the disease. The skin about the ankle was a little more firm, fœtor disappeared, respirations and pulse about the same, temperature 106°. Repeated the prescription of iron, quinine, and whisky, but dropped out the aconite and belladonna, and substituted in a separate prescription antifebrine in 3-dram doses, every four hours, dissolved in whisky. Changed my local application to an aqueous solution of picric acid, which tended greatly to dry up the secretions.

August 26.—Found the local affection better, but the swelling had increased daily until to-day it had invaded the axillary region to quite an extent; temperature 104°, which demonstrated the action of the antifebrine. The extreme tension in the axilla led me to suspect that there was an abscess in the axillary glands, and I so informed the owner; continued the same treatment, other than adding a lotion, composed of acetate of lead and tr. opii, to be applied to the swollen tissues three times a day.

August 27.—Temperature 105½°, general prostration more marked. I ordered the patient removed from his box, and with considerable difficulty got him out into the bright sunlight and gave him a bath of tepid water over his entire body, which, combined with a dose of antifebrine, brought the temperature down in one hour to 103°.

August 28.—General appearance better, but temperature 104°.

August 29.—Temperature 102°, swelling decreasing throughout the leg, but still remained tense and very tender to the touch in the axilla.

August 30.—Appeared much better, temperature 102°, but diagnosed axillary abscess,—but concluded it was not ready for operation.

September 3.—Made an examination and decided to operate. Cleansed the external parts with warm water, carbolized 5 per cent., and made my incision one and one-half inches in length through the pectoral muscles and struck the pocket at its depending part and evacuated two pints of pus. The after treatment considered in cleansing the cavity with hydrogen peroxide and irrigating twice daily with warm water, containing 5 per cent. carbolic acid, and 2 per cent. of formaldine solution, the patient making an excellent recovery.

Throughout the course of the disease the swollen parts were fomented three and four times daily with hot water, and the patient fed on green cornstalks with the soft ears attached, of which he ate sparingly; also a pail of fresh water was kept constantly before him.

BRONCHOCELE SUCCESSFULLY TREATED IN THE DOG.

By J. B. HOLLENBECK, V. S., Salem, Ohio.

Case No. 1.—Pug dog, about four years old, glands first became enlarged when two years old, steadily increasing in size until breathing became difficult, when the owner concluded to have something done to relieve the distressing symptoms. The dog being very fat, he was first given a cathartic and his diet restricted to one meal per day. Twice a day he was given four drops of the fluid extract of spongia, and once a day ten drops of a 15 per cent. solution of iodoform and glycerine were injected hypodermically into the substance of the glands. This was kept up for about twenty days, when the injections were discontinued, the internal treatment being persisted with for ten days longer, when recovery had taken place.

Case No. 2.—A water spaniel pup, about eleven months old; right gland became enlarged; was of two months' standing when treatment began, which was identical with that of Case No. 1. To all appearances was well in two weeks.

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By W. V. BIESER, D. V. S., New York City.

INTERNAL MEDICATION OF CHRONIC NASAL DISCHARGE WITH IODIDE OF POTASH.—The patients receive 5 to 6 g. of iodide of potash daily in 1 pint of water for 6 to 8 days. If the animals refuse to take the water thus medicated, one lets them thirst for a while. After treatment for this length of time, most cases have resulted in a cure; if no result ensues, renew the treatment after a short interval of two or three days. Only seldom is it necessary to have recourse to the treatment a third time. The glandular swellings are treated locally with inunctions of iodine ointment or kali iodide ointment, or if the swelling is very hard we may cause it to shrink or resolve by injecting tincture of iodine into it.—(*Deutsche Thierärzt. Woch.*)

ULCERATED ENDOCARDITIS OF BILIARY ORIGIN IN THE HORSE.—It was Netter who first, in 1881, demonstrated that there was no specific organism causing this disease, but that it may result as a manifestation of many infectious diseases. Endocarditis may be localized and become chronic, or it may run an acute and very fatal course. Hanot says that endocarditis is an affection of the endocardium, caused not by one but various pathogenic bacteria, whose number continually increase. There is evidence to show that beside special bacteria, there are bacteria of special infections, as septicæmia, erysipelas, puerperal metritis, influenza, pneumonia, or tuberculosis. As responsible for these endocardial attacks, rheumatism, malaria, diphtheria, syphilis, scarlatina, etc., must also be mentioned, and lately catarrh of the gall bladder. In the *Archives of Physiology*, N. and M. in 1896 demonstrated cases in which secondary endocarditis vegetans ulcerosa followed primary infection of the ductus choledecus, accompanied by attacks of biliary colic. The identical bacillus found in the subendothelial exudate of the valvular vegetations were also found in an old abscess of the liver of the same patient. Inoculated into the blood of animals the bacilli kept on thriving, so that it must be assumed that in human beings the gut and ductus cholodecus can be the starting point of the secondary endocardial infection. It is just here where catarrh and lithiasis come in as furnishing the nidus for the development of the germs, which, entering the neighboring lymphatics and portal circulation, finally reach the heart. The endocardium can be stated to be the point of predilection for infection with this bacillus. These conclusions are of weightier import in that similar observations were made on the horse at the anatomical department at the Lyons Veterinary School. Among 22 horses used for anatomical purposes B. found gallstones and endocarditis simultaneously. If it cannot be definitely asserted that lithiasis of the liver is necessarily responsible for endocarditis (for both diseases are rare, as it is in the equine race), still it is evident from the study of these three horses that possibly a close connection exists between the abdominal and thoracic lesions, and that they may stand on the relation to each other of that of cause and effect. The results of further investigations, however, in this direction remain to be ascertained.—(*Deutsche Thierärzt. Woch.*)

MORBUS MACULOSUS IN A DOG—[*Lellman*].—On April 19th, 1897, a dog was brought to me with the history of having been two weeks previously afflicted with loss of appetite and general languor; this was followed by the appearance of a marked swelling in the abdomen. Examination showed the following: A male mastiff, six years old, badly nourished, lustreless coat, conjunctivæ anæmic, pulse small, wiry, irregular and 100 per minute. The cardiac impulse was weakened, but because of the emaciation of the body was nevertheless perceptible. Percussion of the cardiac region showed increased dullness; auscultation gave both a systolic and diastolic murmur, the former due to insufficiency of the mitral valve, the latter to pericardial effusion. The temperature per rectum 100 F., the bodily surface temperature felt subnormal, the nose was dry. The respiration was dyspnœic, 35 per minute; percussion of the thorax gave slight dullness in spots; whereas auscultation of the lungs gave sharply defined vesicular and bronchial respiration. The mucous membranes of the gums and cheeks showed numerous hæmorrhages and erosions; there was a stench from the mouth, the tongue was coated and dry. In the rear abdomen was an enormous swelling (hang belly); percussion showed marked dullness. Palpation of the abdomen showed marked enlargement of the liver, moderate enlargement of the spleen; at the same time some ascites was discernable. The fæces was hard, yellowish gray, slimy and bloody. There was repugnance to food, avidity for fluid. The urine was turbid reddish, 1060 sp. gr. Esbach's test fluid for albumen gives 1 p. mille albumen; no sugar; microscopically red and white blood cells, epithelial casts with red blood cells clinging to them, and bladder epithelium appeared. The hind extremeties were œdematous. Examination of the blood by Thoma-Zeiss hæmatositometer did not show any change in the relative proportion of the white to the red blood cells. In order to insure accuracy as to the diagnosis a test puncture in the abdomen showed the presence of a bloody exudate into the peritoneum. Outside of morbus maculosus the only disease that could be confounded with it was scurvy. Our incomplete knowledge of the hæmorrhagic diatheses will not at the present time allow us to draw a sharp line of demarcation between these two conditions; each practitioner must decide for himself whether the concrete case before him is one of morbus maculosus or scurvy. While ulceration and hæmorrhages into the gums are diagnostic features of scurvy in the human subject, yet it must be conceded that they can also occur in morbus maculosus. But in general one can assert that in human pathology the disease known as scurvy is not as serious nor does it run so severe a course as does the latter. In general the cause of scurvy can be traced to faulty dietetics (absence of vegetable regimen). Close questioning elicited the fact that this dog received proper diet, also that there was not the least reason to suspect poisoning. Prognosis bad. Four days after the dog died of symptoms of profuse hæmorrhage, the nose bleeding profusely before death. The autopsy showed the ordinary hæmorrhage present in patients dying of morbus maculosus. In the peritoneal cavity 2½ litres of blood extravasation, in the submucosa of the stomach and intestines hæmorrhages, in the peritoneal coating of the intestines numerous ecchymoses, and in the liver, spleen, and kidneys hæmorrhages appeared. The liver was markedly, the spleen moderately enlarged. In the pericardium 1½ litres of blood exudate appeared; in the heart were hæmorrhages into the endocardium and insufficiency of the mitral valve. The lungs showed numerous bloody infarcts and a marked chronic bronchitis. There were no patechial spots or hæmorrhages into the skin, subcutaneous tissue, muscles or joints. [In scurvy of human subjects patechiæ into the skin and subcutaneous tissue and especially extravasations into the joints and epiphyses are very common, which two symptoms, especially the joint symptom in connection with spongy and bloody-gum, make diagnosis of scurvy almost positive.—[My own (Bieser's) interpolation].—(*Berl. Thierärzt. Woch.*)

FRENCH REVIEW.

PERIAORTIC ENCEPHALOID SARCOMA—ARTERITIS—OSSIFICATION OF THE AORTA—EMBOLISM OF THE ILIAC.—If the symptoms of arterial embolism following thrombosis have been well described and the diagnosis of the intermittent lameness that accompany them, the pathogeny still remain obscure. In the *Recueil de Med. Veter.*, Mr. G. Maynal relates a case where the lesions of the left iliac were due to a rather uncommon cause. In an animal, which had presented the progressive manifestations of intermittent lameness of the left and afterwards of both hind legs, and whose symptoms were evidently those observed in aortic embolism, the post-mortem revealed the startling cause of the arterial disease. A tumor of sarcomatous nature surrounded the right kidney, involving the aorta on a level with the renal arteries. The kidney itself was free from any alterations, but the aorta had lost its supple condition; its external coat was red, eroded, and rough, and at its termination contained a clot which extended into the iliac arteries, which were double in size. The walls of the aorta were ossified. The sarcoma in modifying the walls of the aorta and giving rise to endarteritis had promoted the formation of the thrombus. The clot, loose in the cavity of the vessel, had moved into the iliac and there given rise to the formation of the embolism, fatal cause of the incurable lameness of the patient.

CHOREA OF THE DIAPHRAGM IN A COW.—Spasms of the diaphragm are of common occurrence in horses, but their presence in cattle is rather rare. From the "Notes of a Practitioner" the *Recueil* publishes an interesting case observed in a Normandy cow in an advanced state of pregnancy. When called to examine her the author of the note found her in an apparently perfect condition of health, almost ready to calve, pulse strong and regular, temperature normal; defecation and micturation normal; appetite good, rumination perfect. Nothing abnormal in respiration, heart normal, fœtus alive. Given hay, she took hold of it with an appetite and after a few minutes a sudden spasm was observed at the flank. This soon increased, became stronger, more marked and repeated. At each inspiration, the flank was raised by a sudden powerful jerk, shaking the whole body. The ribs were projected outwards, the expiration short, the respiration increased, rapid, and accompanied with marked roaring. The animal seemed suffering with violent hiccough. These symptoms were truly alarming, and still the animal kept on eating. The hay was then taken away, and as the prehension of the food ceased the symptoms diminished and disappeared, to return as soon as the same food was given again. The treatment was all indicated. A change of diet. The animal was fed to the end of her delivery with food of easy digestion, her ration was carefully measured, the hay entirely suppressed. After delivery the animal was gradually brought back to her ordinary diet and continued in perfect health.

Her choreic symptoms had for the principal cause the condition of gestation, arrived at its last period.

INFECTIOUS HEPATITIS OF YOUNG PIGS [*By Mr. Chapias*].—Since 1889 the author has observed, during the winter, among sucking-pigs a very fatal disease, characterized at post-mortem by lesions of extensive hepatitis. Nocard, who has made a special study of the disease, attributes it to a hepatitis proceeding from an umbilical affection which takes place during the first days following birth, by the introduction of various microbes in the umbilical wound, and hence in various organs. The treatment is essentially prophylactic and consists in antiseptic washing of the umbilical region of the young animals, until complete cicatrization has taken place. Boric solutions and thymol give a thorough asepsy of the umbilical wound. Cleanliness of the pens, dry fresh bedding are also indicated.—(*Progres Veter.*)

IODIDE OF POTASSIUM IN STRYCHNIA POISONING [*By Mr. Videlier*].—A small dog having probably eaten a piece of meat intended to destroy the foxes in a private wood, was taken with all the symptoms of strychnia poisoning. Lying on his left side, his legs were stiffly stretched, the neck contracted in violent extension and the head drawn backwards, the tail elevated, the respirations short, difficult and accelerated. The slightest excitement brought on spasms of violent muscular excitation, hyperæthesia extreme. At first, the author was embarrassed as to what treatment must be adopted. A vomitive was administered with great difficulty, and an epidermic injection was made of 75 centigrammes of iodide of potassium, dissolved in a very small quantity of water. Twenty minutes afterwards the symptoms subsided, and gradually the animal recovered. The improvement showed itself before any other treatment was followed—and before any of a solution of bromide and of chloral, which had been prescribed, had been given. To the iodide the author attributes the antitoxic effects and the good results obtained.—(*Rec. de Med. Vet.*)

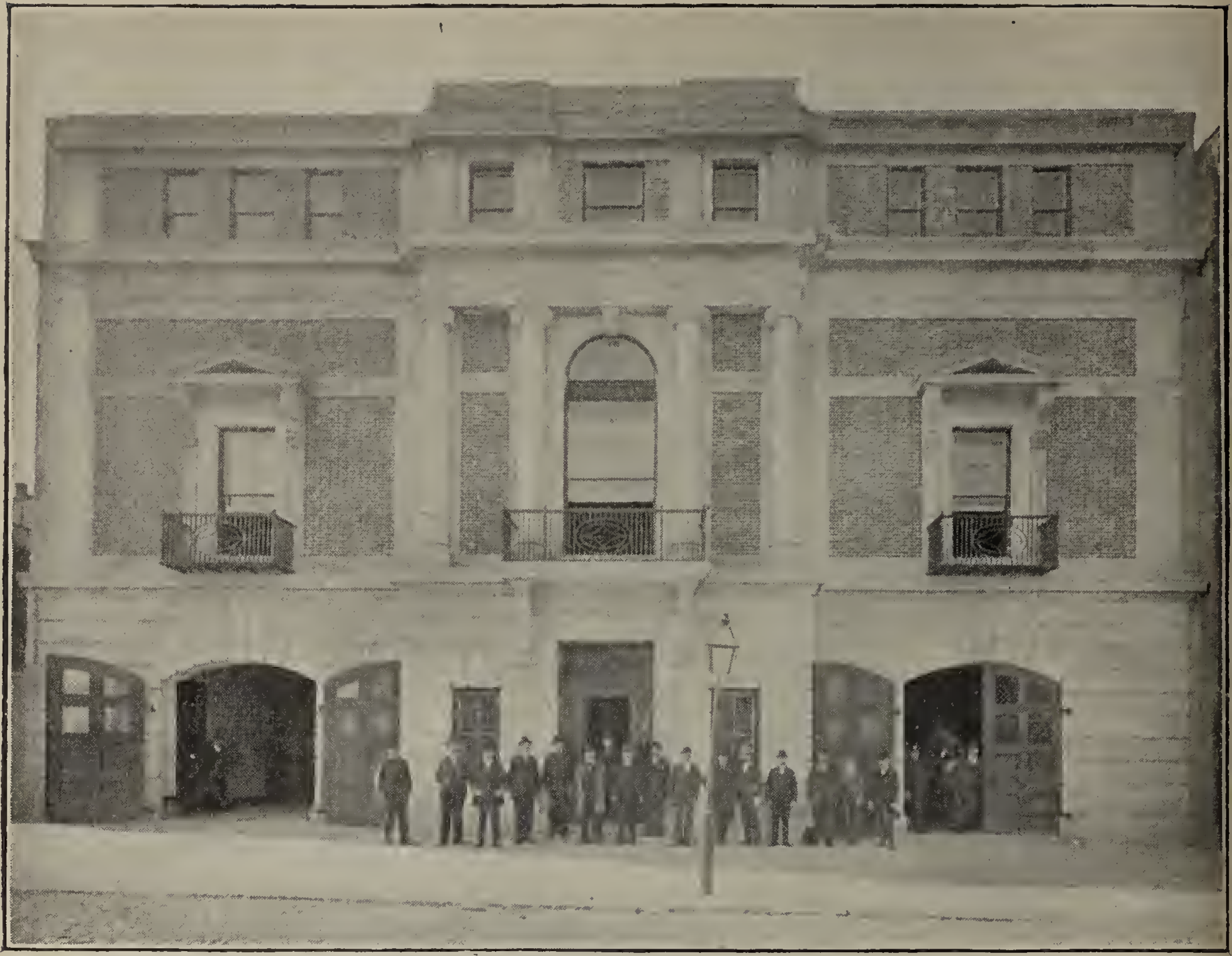
SPANISH REVIEW.

INDIGESTION AND COPRÆSTASIS [*By Jos. Morales Lopez*].—A mule was affected with severe indigestion due to overloaded stomach, presenting the ordinary symptoms of this affection to an alarming degree. To relieve the symptoms and the struggles of the animal a hypodermic injection of muriate of morphine was made, followed by a cathartic, which gave rise to abundant evacuations. The pains subsided and the appetite returned. A few days after, notwithstanding a specially careful diet, a severe constipation occurred, which demanded a gradual use of laxatives for several days before the animal returned to his normal condition.—(*Gaz. de Med. Vet. and Bullet. Vet.*)

THREE CLINICAL CASES [*By Antonio Perez Rubio*].—1. Following a kick received on the left metatarsus, a mule had a large splint, which rapidly assumed great dimensions, and for two months resisted all forms of revulsive treatment. A radical recovery was, however, ultimately obtained by a single application of the red ointment of Méré. 2. Upon a five-year-old an exostosis of right metacarpus was treated by the application of dry firing in points, without result. The application of the same red ointment of Méré produced a violent inflammation of the whole region, which gradually diminished and still left the exostosis smaller in size, but yet very painful. A second application was followed by the same effect, but with a more satisfactory result. When the scabs of the blister had subsided, the exostosis had entirely disappeared. 3. A similar case is also mentioned in another horse, in which several applications of various blisters had failed, and which was entirely removed, without loss of hair, and without any blemishes by three successive applications of the same ointment.—(*Gaz. de Med. Vet. and Bullet. Vet.*)

A FIRE DEPARTMENT VETERINARY HOSPITAL.

The plate on following page is a picture of the new veterinary hospital and training quarters of the Fire Department of the Borough of Brooklyn, New York City, which were thrown into commission three or four months ago. We believe it is the only specially-built hospital for the horses of any city department in the United States, except Detroit, Mich. A visit to the building and an inspection of its arrangement showed a very complete and convenient infirmary. The building, which is 50x90, is of light colored brick, of substantial construction and modern architecture, is divided into two sections—one for the sick and lame animals of the department, the other for "green" horses training for the service. In the infirmary there are 32 single and 7 box stalls, and a most complete stall for soaking the lower portion of the limbs and feet, into which



either hot or cold water may be run in from faucets, and emptied when through with by simply removing the stopper from the trap leading to the drain. The horse is placed in this stall, tied, the door closed, and submitted to the process as long as required; the bath may be medicated if desired, and kept at any temperature. The stalls are on the second floor, to which the patient may be taken by elevator, if the trip by the "run-way" is deemed unadvisable. The building is heated by steam throughout, and is lighted by both gas and electricity.

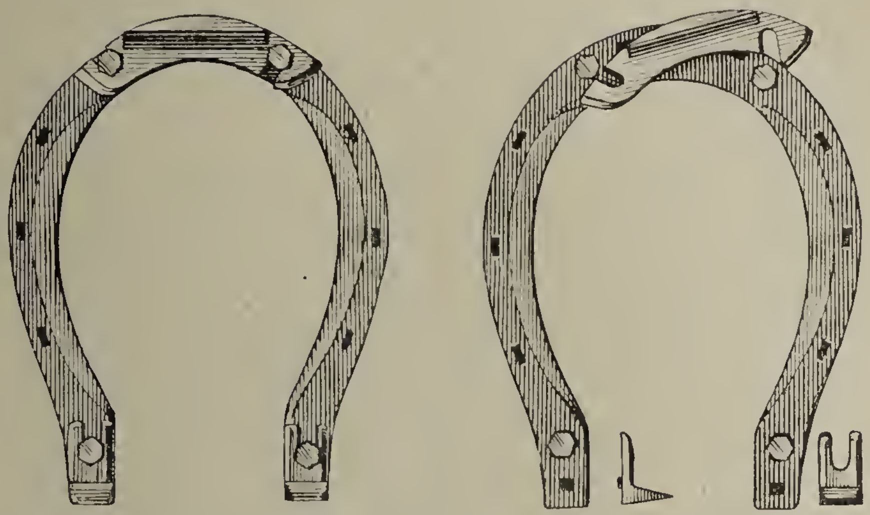
In a light front room on this floor is the operating room, 18x25, with cement floor, supplied with a McGee operating table, stocks, pharmacy, instrument cases, hot and cold water, etc.

E. H. Heard, M. R. C. V. S., the veterinarian for the department, who is a member of the uniform corps with rank and pay of assistant district engineer, is in charge of the hospital. The foreman is James H. Brennan, who lives on the third floor, and has been with the department for many years.

"The Veterinary Blue Book" is being delivered to its subscribers. We will revise it in next issue.

A MOVABLE-CALK ANTI-SLIPPING SHOE.

The shoe which is the subject of the accompanying illustrations is the invention of that genial and practical veterinarian, James McDonough, D. V. S., of Montclair, N. J., who previous to graduating was a practical and prosperous horse shoer. He has thoroughly tested the practicability of the shoe on numberless horses in various capacities, and it will soon be placed upon the market as a ready-for-use shoe to meet all conditions of weather. The calks are of various kinds, from simple roughness to sharp ice calks, are readily removed and replaced, and are inexpensive.



These shoes are provided with four screw-holes, two in the toe, and one in each heel. Also a square hole in the heel to receive the stay on the upper side of the calk. The calks are of the old-fashioned shape set upon a thin plate, or base, which is provided with slots, to receive the retaining screws. To remove the calks, the screws are given one turn to the left, which releases them, and the slots permit of their displacement.

CORRESPONDENCE.

ARE THERE SUCH THINGS AS "FAKE CASE REPORTS"?

FORT SAM HOUSTON, TEXAS, Dec. 20, 1897.

Editors American Veterinary Review:

DEAR SIRS :—Are there such things as fake case reports in the veterinary journals? I'm very much afraid there are. I have followed case reports for a number of years,—brilliant looking things on paper, astounding display of anatomical knowledge, cribbed, perchance, subsequently from old man Chauveau or Strangeway. The description of the manipulation of the bistoury was hair-raising; how that artery was avoided, how this nerve was taken up, and how those veins were left untouched, while not a drop of the sanguinary fluid lent its nerve-rasping hue to detract from the beauty, the expertness—in a word, the surgical magnificence of the bloodless, serious, and never-to-be-forgotten operation. What a sickening sensation used to hover around our epigastric region when, after reading these things, we began to think we were not in it, that the fellow at the other end had the business by the terminal portion of the large intestines, and a downhill pull on it at that; how we used to grab our Chauveau and go through him like a dose of sulphate of magnesia, in a wild effort to discover what it was we had missed, and began mentally to abuse the "Old Man" for allowing us to graduate, knowing so little. And, then, on the next page how the fellow cured the most serious of diseases with a simple hypodermic injection of some newly discovered alkaloid, while we were compelled to sit up nights ruminating on the benefits to be derived from the constant and continuous use of aquæ bull., which, by the way, doesn't mean the urine of that animal; and what agony possessed our professional ego when we cut veins, arteries, and nerves in the identical operations; how we had to fall back on the old-time ligatures and compress, and how we discovered later on that in our hands the much-lauded alkaloid wasn't worth two hurrahs in Dante's Inferno. When it came down to straight business, and our client anxiously awaiting results with that peculiar expression on his countenance that tells you as plainly as words that he has a mind to hire a man to kick him around the block for having called you in the first place.

What wonderful things happen in the case-report columns! What miraculous recoveries! What sudden and unexpected uprisings and outgoings! Verily, the days of miracles have returned, and the veterinary profession has a barbed-wire fence around the same.

The "devil a word" do we hear of the failures; the anguish of souls, manifested when the brazen-hearted knight of the bucket and pitchfork who presides o'er the destinies of the stable, and tells you with a pitiless voice when you inquire next morning, "Well, how is he this morning, Mike?" "Well, docthor, I giv him the last dose at twinty-wan and a haluf minites afther tin, as ye tould me, and he died at tin thirty, without sayin a word. I don't think it was the plumonia at all, but sumthing the matter wid his wather works." Not a word of the effect of the big doses of quinine and acetate of ammonia; not a word about the hygiene and sanitation; not a word about the attendant, the buckets of fresh water, the regulated clothing, the selection of the food, the twenty things that go to bring a patient back to health and strength, when three-fourths of the alkaloids and other so-called remedies are forgotten.

I love a cheerful and good-natured liar. I can hit the breeze on that kind of a trail myself, but when it gets down to good old-fashioned fake case reporting just for the momentary tickling sensation of reading your name in print, such as "A Case of Hydrocrania, by Doctor John McSwatt," it has a tendency to make weary the muscles of the gluteal region.

A genuine case report, failure or success, is of much benefit to the reader—report of a failure of more value than the other, as the mistakes can be seen at a glance and benefited by, while the fake report has no value at all, and is more than misleading to the young practitioner.

G. E. GRIFFIN (Vet.), *New York.*

AN ORIGINAL METHOD OF REDUCING EVERSION OF THE UTERUS.

SAN JOSE, CAL., Dec. 15, 1897.

Editors American Veterinary Review:

DEAR SIRS:—In the November number of the REVIEW I was much interested and pleased with the communication of Dr. N. B. Rhodes describing his method and treatment of eversion of the uterus.

I wish to supplement the matter by offering what I believe to be an original method for the reduction and return of the swollen and distended mass to its natural position. It is as follows: After thoroughly cleansing and disinfecting with a gentle stream from a fountain syringe, let the womb be placed upon a large clean and somewhat loosely-woven linen sheet, which should be made to envelop the entire mass by folding over it, taking care to keep the free edges of the sheet close against the vulva. Now let two careful assistants raise the whole matter as high as possible by the folded ends of the sheet, the operator helping to sustain the mass by placing his hands under it, and at the same time keeping the edges of the sheet in situation. The assistants should now be directed to slowly twist the ends that they are holding, and the operator will be gratified at observing the mass rapidly diminish, until without hardly an effort it can be returned to its natural position. Some little blood will escape during the compression through the meshes of the sheet, but all risk of rents, punctures and abrasions is obviated, and the operation expedited, to the comfort of both operator and patient.

I have followed this method for years, and have yet to find any untoward symptom as a result of its application.

Respectfully,
HUME A. SPENCER.

ARMY VETERINARY SURGEONS.

BROOKLYN, N. Y., Jan. 14, 1898.

Editors American Veterinary Review:

DEAR SIRS:—At times I am apt to rummage through old papers, as a maid would her love letters, to draw momentary solace from the happy past, which the fleeting wings of time, in many instances, allow to exist alone in memory. Among the number I keep and prize, I came across the following, which speaks for itself, and seems to be a stern reminder that nearly ten years has elapsed since it was written and nothing has been done. Perhaps printing it might act as a prod to spur on those who have a chance to follow the matter to its goal:

> HORSE GUARDS, WAR OFFICE, S. W., LONDON, Nov. 11, 1889.
>
> *Dear Mr. Pendry:*
>
> I am very pleased to hear from you. I hope you will be successful in placing veterinary surgeons in the United States Army in a better position. At present it is a most degrading situation to be placed in, and one from which a professional gentleman should be removed as speedily as possible. It reflects no credit on your Government, neither does it favor the public interests. I wish I could aid you further than by sending you the enclosed copy of our regulations. * * * I remain,
>
> Sincerely yours,
> G. FLEMING.

By the way, the writer of this once said to me that he thought that when he was through with army matters he would run over and see us. It's too bad he does not make up his mind to do so, as he would find a hearty welcome among American veterinarians. W. H. PENDRY, D. V. S.

DR. BUTLER ANNOUNCES THE NEXT MEETING-PLACE OF THE U. S. V. M. A.

STARKVILLE, MISS., Jan. 20, 1898.

Editors American Veterinary Review:

DEAR SIRS:—Permit me, on behalf of the Executive Committee of the United States Veterinary Medical Association, to announce the vote of that committee on the place for holding the next meeting of the association. It is as follows: for Omaha, 10; for Boston, 3. Now, that this important question of location has been settled, with such a decided majority for the successful Western city, let us all join forces and strive to make the meeting next September the greatest in the history of our association. Greatest, not only in good to the individual membership, but also in real growth of the association as the national representative of American veterinary science.

Very respectfully,
TAIT BUTLER, *Chairman Ex. Committee.*

BIBLIOGRAPHY.

BREEDING RACE HORSES BY THE FIGURE SYSTEM. By C. Bruce Lowe. Edited by W. Allison. New York: W. R. Jenkins, Publisher, 851 Sixth Avenue.

We have received from the well-known veterinary publishing house of Jenkins, the American edition of this celebrated work of Bruce Lowe, and while we cannot in the limited space at our disposal, undertake to give even an idea of the system to which the author has given a life-time of study, we can assure those of our readers who are interested in the scientific breeding of the thoroughbred that he has mastered in the simplest fashion possible a method of mating producing sires and running families so that the merest novice can understand and appreciate it. Taking as the basis of calculations families whose sires are prepotent he gives them certain numbers, and other figures to strains whose members are especially noted as racers, and he indicates how their union may produce the best qualifications. The history of the past proves the accuracy of his deductions and the prophecies for the future are grounded upon the same reasoning. It is quarto in size, illustrated by photographic plates of noted sires, is splendidly bound, and contains 262 pages. As illustrative of the scope of the work, it contains the following chapters: Origin of the vitality of the English racehorse; identification of female lines by figures; a classification of the families; sires, the line of Wisher; some Australian sires; the running lines and how to use them; how to breed great stake horses and sires; phenomenal race-horses; the breeding of sprinters; the theory of saturation, or the influence of sire upon dam; inbred dams and outbred sires; stud farms and their management; on the law of sex; the Arab as an outcross; gossip about men and horses.

The book may be obtained from William R. Jenkins, 851–853 Sixth Avenue, New York.

THE VETERINARIAN'S VISITING LIST or Professional Diary. Compiled by D. P. Yonkerman, V. S., Kalamazoo, Mich. New York: William Wood & Co.

Under this title Dr. Yonkerman presents to the profession a pocket visiting list and reference book, much resembling the one which Dr. Bell has issued for the past five or six years. The code of signs differs somewhat as do the tables embraced in the front of the diary as, for instance, there is a table of the doses of the chief alkaloids used by veterinarians and one for the principal hypodermic solutions. A number of formulæ are also incorporated, and a list of the defects for which horses examined for soundness are usually condemned. The publishers have presented it in convenient size for the pocket, and will mail it to any address on receipt of $1.25.

PRACTICAL TOXICOLOGY FOR PHYSICIANS AND STUDENTS. By Prof. Dr. Rudolf Kobert, late Director of the Pharmacological Institute, Dorpat, Russia. Translated and edited by L. H. Friedburg, Ph. D. New York: W. R. Jenkins, Publisher, 851–853 Sixth Avenue.

This standard work of Kobert has been translated with the idea of giving practitioners and students practical knowledge of toxicology without going too deeply into the mysteries and intricacies of chemistry. It may be said that the translator has admirably succeeded, for the comprehensive tables into which the subject is largely condensed give at a glance all that is necessary for the practitioner to know of the general subject, while the student can grasp a comprehension of the range of toxicology from them, in the light of the explanatory chapters preceding them.

Nothing of a like nature exists in English literature, and we can truly say that no veterinary library is complete without a copy of the work, which may be obtained of the publisher at $2.50.

OBITUARY.

Death seems to be especially frequent in its visitations upon the alumni of the American Veterinary College. This month we are apprised that no fewer than three of her graduates have passed away in the past month or two, as follows:

OSCAR E. BUSENER, D.V. S., class of '91, one of the brightest and most promising of the alumni, who located in the Bull's Head District of New York City, soon after graduation, and at once commanded a leading position as a practical veterinarian. He had been for years prior to entering college in charge of the veterinary instrument department of the well-known house of John Reynders & Co., and enjoyed an extensive acquaintance with veterinarians throughout the country. Just at the time of realizing his hopes, he was attacked by the insidious tuberculosis, and lingered but a short time.

CARLISLE N. DARKE, D. V. S., class of '92, of Guttenberg, N. J., another bright alumnus, in the flower of manhood, with brilliant prospects, hosts of friends, and everything to live for.

J. J. SHOEMAKER, D. V. S., class of '87, of Bluffton, Ind., who took a post-graduate course, having previously received his degree at the Ontario College. The particulars of his demise were not transmitted to us, simply the announcement.

SOCIETY MEETINGS.

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

By a vote of 10 to 3 of the Executive Committee of this association, Omaha, Nebraska, has been selected as the place for holding the thirty-fifth annual meeting, the dates of which are Tuesday, Wednesday, and Thursday, Sept. 6, 7, and 8, 1898.

We are already assured from the West that the next meeting will lack in nothing to equal, if not surpass, any former meeting, in attendance, entertainment, and programme.

The Iowa and Nebraska State Associations are considering the feasibility of holding a joint meeting at Omaha, on the first day of the U. S. V. M. A. meeting.

President Salmon announces the appointment of the following Committee on Army Legislation: Dr. J. P. Turner, Fort Meyer, Va. (Chairman); Dr. M. Stalker, Ames, Iowa; Dr. A. G. Vogt, Newark, N. J.; Dr. Austin Peters, Boston, Mass.; Dr. E. P. Niles, Blacksburg, Va.

The President has also just announced the Resident State Secretaries, which are as follows: Alabama, C. A. Cary, Auburn; Arizona, J. C. Norton, Phœnix; Arkansas, R. R. Dinwiddie, Fayetteville; California, Fred C. Pierce, 1724 Webster St., Oakland; Colorado, D. P. Frame, 11 South Wasatch Ave., Colorado Springs; Connecticut, R. P. Lyman, 328 Asylum St., Hartford; Delaware, H. P. Eves, 507 West 9th St., Wilmington; District of Columbia, A. M. Farrington, Dept. of Agriculture, Washington; Georgia, Geo. B. Blackman, Rome; Illinois, F. S. Shoenleber, Morris; Indiana, J. R. Mitchell, Evansville; Iowa, T. A. Bown, Chariton; Kansas, R. H. Harrison, Atchison; Kentucky, F. S. Eisenman, 222 East Main St., Louisville; Louisiana, W. H. Dalrymple, Baton Rouge; Maine, Wm. S. Lord, U. S. Hotel, Portland; Maryland, William Dougherty, 1035 Cathedral St., Baltimore; Massachusetts, J. F. Winchester, Lawrence; Michigan, S. Brenton, 83 5th St., Detroit; Minnesota, M. H. Reynolds, St. Anthony Park; Mississippi, J. C. Robert, Agricultural College; Missouri, Chas. Ellis, 3230 Locust St., St. Louis; Montana, M. E. Knowles, Butte; Nebraska, W. D. Hammond, Wayne; New Hampshire, Lemuel Pope, Jr., Portsmouth; New Jersey, J. P. Lowe, Bloomfield Ave., Passaic; New York, William Henry Kelly, 195 Western Ave., Albany; North Carolina, A. S. Wheeler, Biltmore; North Dakota, T. D. Hinebauch, Fargo; Ohio, T. Bent Cotton, Mount Vernon; Pennsylvania, W. H. Ridge, Trevose; Rhode Island, Walter L. Burt, 26 Tabor Ave., Providence; South Carolina, Benjamin McInnes, Charleston; South Dakota, M. J. Treacy, Fort Meade; Tennessee, Joseph Plaskett, 529 Broad St., Nashville; Texas, M. Francis, College Station; Virginia, E. P. Niles, Blacksburg, Va.; Washington, S. B. Nelson, Pullman; West Virginia, L. N. Reefer, 1406 Chapine St., Wheeling.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The December meeting of the Keystone Veterinary Medical Association was held, as usual, in Room 1, third floor, northwest corner Broad and Filbert Streets, Philadelphia, the following members of the profession being present: Drs. Charles Williams, J. D. Houldsworth, J. O. George, Wm. P. Phipps, Benj. Underhill, J. J. Maher, M. Drake, A. W. Lushington, W. Horace Hoskins, Leonard Pearson, W. L. Rhoads, Thomas B. Rayner, C. J. Marshall; also Messrs. J. W. Megary, P. K. Jones, and Blount.

During the committee reports Dr. Hoskins, as chairman of the committee appointed to take up the work for the association in the interest of a better meat and milk inspection for Philadelphia in conjunction with the Woman's Health Protective Association, said the Woman's H. P. A. had appointed a committee of five to specially work with kindred committees. He spoke of the doll show to be given at Horticultural Hall in the interest of the Health Protective Hospital for contagious diseases and the Woman's H. P. A., and asked if any one knew of a model or plans of a perfectly hygienic, sanitary slaughter-house.

Dr. Pearson said he had a small plan of the abattoir in Copenhagen, which was probably one of the best in the world. He thought this plan could be enlarged and made to answer very well.

Dr. Hoskins said the committee expected to have a meeting with the County Medical Society, which they hoped would be productive of much good.

The application of A. W. Lushington, V.M.D., for membership was reported by the Secretary, which was now passed to the Board of Censors, upon which board Dr. Pearson appointed Dr. C. J. Marshall. The application being favorably recommended by the Censors, Dr. Lushington was duly elected an active member, and introduced by President Pearson.

A communication from Dr. Harger, the essayist of the evening, saying it would be impossible for him to be present, was now read.

Dr. Pearson called for reports of cases, which could not be made at last meeting for want of time. In response Dr. Hoskins reported the case of a dog having been under treatment for four years, which came to his hospital in October. There was discharge from nostrils, loss of appetite, distressed breathing, enlargement of all glands, especially thyroid and inguinal, which were large as eggs, dropsical effusion along the thorax; temperature 104 2-5°. The autopsy showed enlarged glands, liver pale, pulp of spleen enlarged and liquefied; intestines anæmic. He had Dr. Formad examine some sections from glands, and from him received the following report of conditions found: "Hypertrophy of lymphatic glands, lymphoma, often found with blood diseases; lymphadenoma is a rare condition, but few cases on record.

Dr. Pearson then spoke of a cat having pernicious leucæmia, and asked Dr. C. J. Marshall to tell what he knew of the case, he having had it in charge. The cat was first attended for skin trouble, which at times seemed to be responding to treatment, then would grow worse; the glands became enlarged; some days they would be very large, next day might be nearly normal. Examination of blood showed white corpuscles much enlarged. Tbe autopsy proved the case to be one seldom found, and but few similar are on record.

Dr. Pearson now spoke of two outbreaks of anthrax in the State, and said both were due to the working of foreign dried hides, and said they intended vaccinating the cattle in certain districts next season should the loss from anthrax exceed 4 or 5 per cent, as this was the percentage of loss in vaccination.

After the report of several interesting cases, Dr. Hoskins asked that the views of all present might be freely given as to the best place for the 1898 meeting of the U. S. V. M. A. It was the opinion of those present, both visitors and members, that the greatest good could be realized by meeting in Boston.

After this had been straightened out, Dr. Hoskins spoke of the money needed in the furtherance of the work now being done in the interests of better meat and milk inspection for Philadelphia. Moved, seconded and carried that the appointed committee be authorized to solicit subscriptions for this purpose.

Notice was now given of the mid-winter examination to be given by the State Examining Board.

The meeting now adjourned till January 11, 1898.

DR. W. L. RHOADS, *Secretary.*

The January meeting of the Keystone Veterinary Medical Association was called to order by President Leonard Pearson on Tuesday evening, January 11, with the following present: Drs. J. Cheston Morris, S. J. J. Harger, Fallows, J. D. Houldsworth, W. Horace Hoskins, Chas. Lintz, Leonard Pearson, Jas. B. Rayner, W. L. Rhoads, Thomas B. Rayner, H. A. Christmann, C. J. Marshall, A. W. Lushington; also Messrs. Repp, Spindler, Cunningham, Kirby and Jones, of the Veterinary Department of the University of Pennsylvania.

After the routine business, Dr. S. J. J. Harger read a very entertaining and instructive paper on "The Use of Arecoline in Colic." The dose is ½ to ¾ grains hypodermically; the action and results are similar to those obtained by the use of eserine and pilocarpine combined; it is rapidly eliminated, and successive hourly doses can be easily borne by the animal. Contra-indicated in horses with respiratory troubles, or with functional alterations of the heart; also in pregnant females; common horses are more susceptible than well-bred ones; cattle are very susceptible. This paper was much appreciated, and caused a number of comments. Those having used the drug were favorably impressed with its action. Dr. C. J. Marshall said he had used it in a number of cases, and found two grains of arecoline gave about the same results as two grains of eserine and three grains of pilocarpine.

Dr. Lintz said you always had a friction of the joints in impaction colic.

The delivery of milk in glass jars was now discussed, which was most general and animated, the consensus of opinion being that it was the best method if properly done.

The President appointed Drs. C. J. Marshall and Hoskins a committee to answer a press article against this method of delivery.

Dr. Hoskins asked what could be done to ascertain the truth of the advertisements carried by many delivery wagons, viz., "Under veterinary and sanitary supervision." The President appointed Drs. Houldsworth, Lintz and C. J. Marshall as a committee to look into this matter.

Meeting now adjoined to meet Feb. 8, 1898.

DR. W. L. RHOADS, *Secretary.*

ONTARIO VETERINARY ASSOCIATION.

The annual meeting was held in the Veterinary College, Toronto, on December 24th, 1897.

The President, Major Lloyd, called the meeting to order at 11.15 A. M. He said there was much business of importance to attend to, therefore, he would not take up the time of the meeting with any unnecessary remarks, but would proceed to business at once. Therefore, he would call upon the Secretary to read the minutes of the previous meeting, last Christmas, also the special meeting in March. Minutes were read and approved.

Mr. C. L. Smith, V.S., of Brantford, was duly elected a member.

The Secretary reported that a large number of practitioners had registered during the past year. That he had also received a large number of inquiries relating to the tuberculin test in connection with the appointment of Col. McCrae in instructing farmers to apply the test themselves; also a number of inquiries concerning the examination of veterinary practitioners called for by the Dominion Government, and conducted by Prof. D. McEachran.

The meeting adjourned till after lunch.

The meeting was opened at 1.25 P. M.

Mr. Hopkins, V.S., of Green River, read a paper on "Laminitis," which was well discussed.

Mr. Martin, V.S., of Toronto, read an excellent paper on "The Operation of Tenotomy in Spavin Lameness." He had found it to be more beneficial than the actual cautery. He approved of using cocaine and adopting aseptic precautions. He also recommended not merely division of the tendon, but excision of a part of it. He reported very favorable results. Of 12 cases, in 8 the lameness was removed, 2 were improved, and 1 or 2 were failures. In the discussion that followed, in which Messrs. W. Wilson, J. D. O'Neil, O. Graham, and others took part, Mr. Martin said he considered that the operation gave rest to the bones of the articulation; also the foot must be levelled so as to take pressure off the internal side of the hock, the internal side of the wall being often much longer. An animated discussion was continued as to the relative benefits of "firing" and "tenotomy."

Prof. Sisson, V.S., read an excellent paper on "Topographical Anatomy" of the thoracic and abdominal viscera of the horse.

Mr. W. Wilson brought forward a proposed bill that had been mailed to him, brought in to the Dominion Government, in respect to cruelty of animals. A number of copies of the bill had been received by veterinary surgeons. The proposed bill was read, and it was moved by Mr. Gibb, seconded by Mr. W. Wilson, and carried, "that the bill should have the strong support of the members of this association and the profession at large."

The appointment of Colonel McCrae by the Provincial Government to instruct the farmers in Ontario in the application of the "tuberculin test" themselves was brought forward by Mr. C. Elliott and severely criticised. He also spoke of the action of the Dominion Government deputing Professor McEachran to examine veterinary surgeons. He contrasted the Provincial Government considering the farmers themselves as capable of applying the test. The Dominion Government, as advised by Professor McEachran, considers that veterinary surgeons are not capable. Mr. Gibb and several other prominent reformers, strongly condemned the action of the Provincial Government. Mr. W. Wilson thinks the farmers applying the test themselves will have the effect of injuring our cattle trade with the United States. Mr. W. Cowan condemned the action of the Provincial Government; he said that we have the healthiest country for cattle under the sun, and this course will lead the world to believe that we are overrun with tuberculosis, whereas in reality, in comparison with other countries, we are remarkably free. After a warm interchange of ideas, in which there were few or no opponents, Messrs. Cowan, Elliott, Sisson and Martin were appointed a committee to draw up a resolution to be forwarded to Mr. J. Dryden, Minister of Agriculture for the Province of Ontario.

The following resolution was approved :

Memorial of the Ontario Veterinary Association at their Annual Meeting in Toronto, Dec. 24, 1897, humbly showeth :

1.—That the tuberculin test requires to be safeguarded by certain precautions, not possible to those without professional experience.

2.—That it is not in the interest of the farmers of this province to have any person authorized to instruct them in the use of tuberculin as a test for tuberculosis, as it is liable to arouse unnecessary alarm concerning the health of the cattle of Ontario.

3.—Further, that a continuation of the present methods will bring the tuberculin test into disrepute, for the following reason : That animals destined for shipment to the United States may be injected with tuberculin by the owners or dealers, and subsequent test by the Dominion Veterinary Inspector,—rendered both useless and deceptive, paving the way for fraud and consequently injuring the live stock trade of this country.

4.—If such appointment as specified above were necessary, we condemn the action of the Minister of Agriculture in appointing Lieutenant-Colonel McCrae to that position, instead of a duly qualified veterinary surgeon.

The Secretary was asked if he had received any communication from the Provincial Government since the deputation relating to better protection for the profession, who had the honor of an interview. He replied that he had received no communication.

Messrs. Blackall, Orr, Gibb, and Campbell, as representing the Western Veterinary Association, requested co-operation in the work of procuring better legal protection.

The election of officers then took place, with the following results : Mr. S. Sisson, President ; Mr. W. Wilson, First Vice-President ; Mr. Blackall, Second Vice-President ; Mr. C. H. Sweetapple, Secretary and Treasurer ; Directors—Messrs. Steele, Coulter, H. S. Wende, W. Cowan, O. Graham, W. Gibb, J. Wagner, and F. Daley. Delegates to Western Fair Association—Messrs. J. H. Wilson, Sr., and J. D. O'Neill. Delegates to Industrial Fair, Toronto—Prof. A. Smith and S. Sisson. Auditors—Messrs. C. Elliott and J. D. O'Neil.

The following members volunteered to read papers at the next meeting—Messrs. Shillinglaw, W. Wilson, H. S. Wende, O. Graham, C. L. Smith and W. E. Martin.

The retiring President then vacated the chair in favor of the President-elect. A hearty vote of thanks was tendered Major Lloyd for his able conduct in the chair during his term of office. Mr. Sisson on taking the chair in a few graceful words thanked the members most heartily for the honor conferred on him, and the meeting adjourned.

C. H. SWEETAPPLE, V.S., *Sec'y-Treas.*

MINNESOTA STATE VETERINARY MEDICAL ASSOCIATION.

The regular annual meeting was called on Tuesday, Jan. 11th, at the Merchants' Hotel, St. Paul, with Dr. G. A. Dallimore in the chair, and Dr. R. Price as Secretary *pro tem.* An adjournment was taken until the following day, when the meeting was called to order by Vice-President Anderson. After transacting a little routine business, the meeting was adjourned until 2 P. M. at the State Experimental Farm.

At the farm the meeting was called to order by President Brimhall. Reports of Secretary and Treasurer read and adopted. Drs. J. W. Gould, of Fairmount; B. A. Pomeroy, of St. Paul, and J. J. McLaughlin, of Blue Earth City, were elected members of the association.

A number of interesting operations were then performed at the college veterinary hospital. First, Dr. C. C. Lyford, of Minneapolis, gave a demonstration of "ovaridectomy," on two pigs, which was much appreciated. Two shorthorn heifers were then brought in and secured for the operation of ovaridectomy, which was very skilfully performed by Dr. M. H. Reynolds, of the State Experimental Farm. A case of dentistry was then produced, and Dr. J. P. Anderson, of Rochester, was invited to take charge of it, which he did, manifesting considerable skill in handling a horse's mouth while operating on the teeth.

Meeting then adjourned till 6.30 P. M., when Dr. G. A. Dallimore, of St. Paul, gave a short report on legislative effort to control the practice of veterinary medicine in the State.

The association rules and by-laws proposed at the last meeting were read and adopted, and the association proceeded to the election of officers, with the following result: Dr. N. S. Erb, Faribault, President; Dr. M. H. Reynolds, St. Anthony Park, First Vice-President; Dr. Geo. McGillivray, Spring Valley, Second Vice-President; Dr. L. Hay, Faribault, Secretary and Treasurer. Drs. Erb, Hay, Amos, Brimhall and Dallimore were elected as members of the Board of Trustees.

Dr. L. Hay then read a paper on an obscure case of lameness, which called forth a lively discussion. An adjournment was then taken till the following day.

On January 13th the meeting was called to order by President Erb. The programme was opened by Dr. Lyford reading a paper on "Posterior Lameness due to Obstruction of Blood Vessels," which was thoroughly discussed.

Dr. Amos then made a report on a case at Owatonna, which

Dr. Reynolds had operated on at the last meeting; the animal operated on made such an excellent recovery that the doctor thought it worthy of a special report.

Drs. J. W. Gould and J. N. Gould reported some very interesting cases which occurred in their practice.

A number of cases were then brought into the hospital by Dr. Reynolds.

Drs. Amos and Anderson experimented with a battery on an obscure case of lameness.

On motion, the President appointed Drs. C. C. Lyford and R. Price to wait upon the Governor and recommend to him members for the State Board of Veterinary Examiners.

A vote of thanks was tendered Drs. M. H. Reynolds and S. D. Brimhall for courtesies extended and assistance in making the meeting a successful one; and, after deciding to hold the next meeting in Faribault, on July 14th, the meeting adjourned.

L. HAY, V. S., *Secretary.*

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The regular monthly meeting was called to order, Wednesday, Jan. 5, 1898, at 8 o'clock P. M., with the President, Dr. Huidekoper, in the chair. After roll-call, the minutes of the previous meeting were read and approved. The Secretary then read the list of members appointed on the committees by the President for the current year, as follows: Board of Censors—H. D. Gill (Chairman), J. S. Cattanach, Roscoe R. Bell, J. J. Foy, and R. S. MacKellar. Judiciary Committee—A. O'Shea (Chairman), H. D. Gill, J. E. Ryder, C. C. Cattanach, and Herbert Neher.

Reports of Special Committees.—Dr. Gill (chairman of committed appointed by the chair to search the register) reported that Dr. Grenside was properly registered, and that the report in reference to Dr. Hinkston, as given at the last meeting was correct. Moved and seconded that the report be accepted. Carried.

The chair next reported in reference to the "Blue Book," as follows: It is practically all in type, except the table of contents, which will appear in the next ten days. President Huidekoper had advanced considerable money and more would be required to be paid in the next ten days, so the following proposition was made by him to the association. That if the association so desired, he would advance the amount required when due, and that he would thereby assume the financial part of the "Blue Book." After some discussion, it was moved and seconded that President Huidekoper have the financial control of the "Blue Book." Carried.

Reports of Cases.—Dr. Bell reported a case of salivary fistula at the inferior border of the buccinator muscle. Free discussion followed.

Dr. Gill spoke of his experience with azoturia cases after the Christmas holidays, having noted that all of his cases came from badly ventilated stables.

Moved by Dr. Hanson that a committee of five be appointed to see what can be done to enthuse veterinarians to attend, and join the Veterinary Medical Association of New York County. Seconded and carried.

Moved and seconded, that the Executive Committee take into consideration the entertaining of the New York State Veterinary Medical Society. Carried.

Moved and seconded that the meeting adjourn. Carried.

ROBERT W. ELLIS, D. V. S., *Secretary.*

VETERINARY MEDICAL ASSOCIATION OF THE ONTARIO VETERINARY COLLEGE.

The following is a list of the papers read during the past month at the meetings of this society. Many of the essays have shown thorough work on the subjects discussed; and the communications have brought forward several rare cases for discussion, thus giving the students the advantage of hearing from a very wide field of practice.

Essays.—J. C. Palmer, "Osteoporosis"; J. W. Rutledge, "Diagnosis of Disease"; G. T. Elliott, "Torsion of Uterus"; J. P. Stranghan, "Cryptorchids"; J. E. Sexton, "Fistulous Withers"; A. J. Cromwell, "Dehorning"; A. Jordan, "Quittor"; J. L. Devereau, "Polyuria"; A. Sorenson, "Dermatitis Gangrenosa"; R. B. Coutts, "Future of Veterinary Medicine"; G. T. Irons, "Administration of Medicine"; W. J. Ackerman, "Choking;" F. J. Neiman, "Congestion of Lungs"; William Cunningham, "Loco Poisoning"; D. H. McKay, "Sunstroke"; J. D. Bell, "Tuberculosis"; E. B. Shaw, "Texas Fever"; L. T. Dunn, "Fistula"; J. T. Shannon, "Glanders"; D. McKenzie, "Symptomatic Anthrax"; W. M. Wilson, "The Use of Leisure"; H. R. Clark, "Castration"; E. C. Elwes, "Texas Fever."

Communications.—W. J. Ackerman, "Azoturia"; W. M. Wilson, "Impaction of Rumen"; P. Lee C. Gauntt, "Purpura

Hæmorrhagica"; J. A. McDonald, "Dorsal Injury"; J. G. Cruikshanks, "Amputation of Penis"; H. P. Reed, "Azoturia"; E. H. Lawley, "Acute Indigestion"; J. E. Sexton, "Fracture of Os Suffraginis"; R. J. Cromwell, "Meningitis"; W. H. Cory, "Actinomycosis"; J. L. Short, "Parturient Paralysis"; R. B. Coutts, "Injury to Region of Forearm"; L. Bailey, "Azoturia"; W. G. Huyett, "Pica in the Ox"; J. T. Shannon, "Parturient Apoplexy"; William Cunningham, "Spasmodic Colic"; G. K. Cranston, "Purpura Hæmorrhagica"; A. D. McLachlan, "Rumenotomy"; A. C. Walker, "Cæsarian Section"; D. Allen, "Hæmoglobinuria"; G. T. Irons, "Caries of Incisors."

C. W. FISHER, *Secretary.*

REGULAR CLASS OF VETERINARY SURGEONS.

The first meeting of the above-named association was called to order Monday evening, October 25th, in the lecture-room of the veterinary department of the Grand Rapids Medical College, when the following officers were elected: George Hare, President; John A. Scott, Vice-President; L. L. Conkey, Secretary and Treasurer.

The object of this association is the advancement of veterinary science and social intercourse. Its members are confined to graduated veterinary surgeons and college students. Each member is expected to prepare and defend one or more papers on some professional topic during the session, and upon graduating from the college will receive a suitable certificate of membership.

Since its organization the association has met once a week and papers have been read as follows: "Causes of Foot Lameness and How to Shoe for Prevention and Cure," by Thos. A. Bunburg, Niles, Mich.; "Tuberculosis of the Cow and its Relation to Man," by George Hare, of Dowagiac, Mich.; "Navicular Arthritis," by Geo. H. Stevenson, of Detroit, Mich.; "Congestion," by John Knauf, of Bunker Hill, Mich.; "Lymphangitis," by Bert E. Smith, of Free Soil, Mich.; "The Unbalanced Foot as a Cause of Lameness," by L. L. Conkey, of Grand Rapids, Mich.; "Fistulæ," by Lester M. Neuman, of Tampa, Florida.

John A. Scott, of Paris, France, will read a paper at our next meeting, Jan. 10th.

The association has twelve members, all of whom are students in the veterinary department of the Grand Rapids Medical College. L. L. CONKEY, V. S., *Secretary.*

MASSACHUSETTS VETERINARY ASSOCIATION.

The regular monthly meeting was held at 19 Boylston Place, Boston, on Wednesday evening, Nov. 24th. President Winchester in the chair.

Members present were: Drs. Beckett, Burr, Cronon, Frothingham, Hamilton, Labaw, Lee, Lewis, McLaughlin, Paige, Parker, Pierce, Rogers, Sheldon, Soule, Stickney, Winchester, and Winslow.

Dr. J. B. Paige, of the Massachusetts Agricultural College at Amherst, Mass., read a paper on "Veterinary Education in European Schools," which he visited.

The association had as guests Mr. Paige, a brother of the lecturer, and Drs. J. C. Cutting, of Medford, and Charles H. Higgins, of Dover. HENRY S. LEWIS, *Secretary.*

WISCONSIN SOCIETY OF VETERINARY GRADUATES.

The annual meeting will be held in the Assembly Chamber, Madison, on Friday, February 25th, at 1.30 P. M.

The programme will consist of an address by President Dr. L. A. Wright, of Columbus; a paper on "Azoturia in the Dog," by Dr. G. Ed. Leach, Milwaukee; reports of cases by Dr. E. H. Newton, Waupun; Dr. A. H. Hartwig, Watertown, and Dr. D. Roberts, Waukesha.

All veterinarians are cordially invited.

W. G. CLARK, M. D. C., *Secretary.*

THE MISSOURI VALLEY VETERINARY ASSOCIATION

will hold its next meeting at Kansas City, February 9th. Drs. J. B. Wright, R. C. Cooper and S. Stewart will present papers.

NEWS AND ITEMS.

DR. A. B. MORSE has been placed in charge of federal meat inspection at Clinton, Iowa.

DR. J. L. STUART, a government meat inspector formerly stationed at Cleveland, Ohio, has been transferred to Kansas City.

THE REVIEW'S THANKS are tendered Dr. Salmon, of Washington, for a number of duplicate copies, which he kindly forwarded.

DR. LESLIE J. ALLEN has been transferred from the meat inspection division to the Texas fever quarantine service and is stationed on the Mexican border.

C. D. HARTMAN, D. V. S., of Peoria, Ill., is about to retire from practice, which he offers for sale, including his entire outfit, as he expects to enter other business.

TUBERCULIN IN FRANCE.—The test of tuberculin cannot be enforced in France, even in a stable where tuberculosis has been detected, without the consent of the owner.

SWINE DISEASES.—In the March REVIEW will be found a valuable contribution to this subject by S. Veranus A. Moore, of the New York State Veterinary College.

PROF. CORNEVIN.—The death of Prof. Cornevin was recently announced. He was professor of hygiene and zoötechny at the Veterinary School of Lyon. The cause of dead was typhoid fever.

THERE are five veterinarians in Hawaii—three in Honolulu and two on a neighboring island. They are seeking to keep the profession purified by the enactment of a law prohibiting from practice any but graduated men.

VETERINARY SCHOOL OF VIENNA.—Following the example set by Germany, the Emperor of Austria has raised the Veterinary School of Vienna to the rank of university. A rector elected for three years takes the place of the director.

DR. A. T. PETERS, of Experiment Station at Lincoln, Nebraska, an enthusiastic member of the U. S. V. M. A., who worked hard to secure the meeting for Omaha, is already concerning himself about the programme of entertainment.

THE proposition to place all veterinarians connected with meat, dairy and food inspection, and bacteriological work in Greater New York under one veterinary bureau, with a veterinary chief, is being considered by some of the active men.

"GUIDELESS WONDERS" will have competition next fall in the shape of a trotting bull. Ten-year-old George Leaver, Garrettsford, Pa., is handling a yearling bull which goes well to harness. He has driven Jim Flossie a mile over a half-mile track in four minutes and has shown quarters in 55 seconds. The bull goes on a trot and never attempts to make a break.

A CHANGE OF BASE.—Dr. G. Archie Stockwell, F. Z. S., for ten years the confidential medical advisor of Parke, Davis & Co., Detroit, has severed his connection with that firm and is now engaged in the same capacity with Henry K. Wampole & Co., of Philadelphia. Dr. Stockwell also severed his connection with the *Medical Age* in December last, and will probably soon issue a new high-class and wholly independent medical journal that will be entirely separate from his connection with the Philadelphia house.

EXTENDING THE MICROSCOPIC INSPECTION OF MEATS.—In anticipation of a liberal and immediate allowance by Congress the Department of Agriculture is extending the microscopic inspection of pork to every establishment in the land that wants it and is contracting expenses beyond the limit warranted by the appropriation for the current fiscal year. This, however, is being done with an understanding between the Secretary and the leaders in Congress, the latter having promised to give the necessary relief.

TO GOVERN THE SEX OF ANIMALS.—It is reported by cable that "Dr. Schenck, Professor at the University of Vienna and President of the Embryological Institute, claims that after twenty years of experiments he has discovered the secret of exercising an influence over animals and men so as to fix the sex of the offspring. Dr. Schenck declines to reveal it until he has placed his discovery before the Academy of Sciences, but he says the influence depends upon the nature of the food consumed by the female."

COMPARATIVE DECAY OF THE TEETH OF THE HORSE.—The following statistics gathered at the dentistry clinics of the McKillip Veterinary College, Chicago, by Dr. L. A. Merillat, Professor of Dental Surgery, serve to demonstrate the relative susceptibility of the different teeth of the horse to decay: 1st superior molars, 13; 2d superior molars, none; 3d superior molars, 27; 4th superior molars, 133; 5th superior molars, 11; 6th superior molars, 12; inferior molars, 31; canines, 1; incisors, 2; total, 230.

INOCULATING AGAINST RINDERPEST.—The following item appeared in the *Umtata* (South Africa) *Herald* of Nov. 27: "The first supply of serum from the local culture camp arrived in Umtata yesterday, and it is expected that it will now be possible to maintain a continuous supply. Vet.-Surgeon Gray deserves credit for the manner in which he has pushed on the work necessary to enable serum to be obtained locally. He is, however, somewhat hampered in his work on account of the difficulty experienced in obtaining sufficient supplies of rinderpest blood for fortifying purposes."

HAS THIS MAN CONTRACTED RINDERPEST?—"Information has been received from a reliable authority in Port Elizabeth (says the *Telegraph*) to the effect that a farmer named Uriel, of Fort Peddie district, is exhibiting clear symptoms of rinderpest. It appears he was inoculating some cattle, and a thorn got into his hand, which caused some difficulty in extricating, to facilitate which Mr. Uriel used the knife with which he had been inoculating. Some symptoms of an alarming nature presented themselves, and in fact Mr. Uriel is, we hear, in a precarious state."—(*Umtata* [*South Africa*] *Herald*, *Nov. 27.*)

THE NEW YORK COUNTY VETERINARY MEDICAL ASSOCIATION at its last meeting agitated the question of extending its usefulness and increasing its membership, and in obedience to a resolution President Huidekoper appointed the following Committee of Ways and Means for the Advancement of the Association: Dr. Roscoe R. Bell (Chairman), and Drs. Gill, Ryder, J. S. Cattanach, and Farley. It is proposed to have a specially interesting session on March 2. Veterinarians are always welcome, and with the vast territory under its jurisdiction its meetings should always be of a high order and the attendance large.

FIGHTING TUBERCULOSIS IN NORWAY.—The system followed is the same as that of Denmark. The state takes under its charge the cost of the tuberculin and the salaries of the veterinarians employed. In the year 1895–96 about $7000 (34,666 francs) were spent. In 1896–97 a little less (33,333 francs); for the year 1897–98, 65,666 francs have been appropriated. The results obtained have been very satisfactory. On October 31, 1896, tuberculin has been used on 30,787 bovines in 2195 stables. Tuberculosis is less prevalent than in Denmark. 26.1 per cent. of the stables are infected, the proportion of diseased animals is 8.4 per cent. While animals less than six months old give only 1 per cent. of disease, the percentage rises to 3.4 for animals from six months to one year old, to 7.9 in those of one to five, and to 10.3 above five years old.

VETERINARIANS OF PENNSYLVANIA.—Mr. Jno. J. Repp, of the University of Pennsylvania, Veterinary Department, has been engaged in the compilation of a record of the veterinarians of that State. He has given the result of his investigations through an article in the January *Jour. of Comp. Med. and Vet. Arch.*, and the salient figures are as follows: There appear on the Veterinary Surgeons' Registers of the 67 counties of the State, 1770 names. In Pike County no names are registered, while in Philadelphia there are 154. Of the total number of names registered 120 are duplicates, leaving 1650 distinct registrations. Of these deduct 250 who have died, removed, relinquished practice, or registered as castrators only. This leaves 1400. Of this number 400, or 28.5 per cent., are graduates of 17 recognized colleges—probably only 375 of these are practicing.

TUBERCULOSIS IN HAWAII.—*The Evening Bulletin*, of Dec. 30, published at Honolulu, Hawaii, reprints from the December REVIEW, the report of the Committees on Legislation and Sanitary Science and Police of the Pennsylvania State Veterinary Medical Association relative to tuberculosis as an object lesson to their citizens, who are to deal with that subject legislatively this winter. It also reprints the REVIEW'S editorial ridiculing the theory advanced by some authorities of that city that the existing epidemic of dysentery was caused by infection of the milk from cows which had undergone the tuberculin test. It would seem to us that upon an island where the commerce in cattle can be so readily controlled from infection from without that this disease could be effectually eradicated by isolation, sanitation, and control of the new cattle introduced, and, if it is possible, the ends certainly justify almost any means.

A BUGGY-WHIP IN A HORSE'S ALIMENTARY CANAL FOR TWO YEARS.—The following is from the *Bloomington Pantagraph:* "That a stout buggy-whip, four feet and a half long, could remain in a horse's stomach over two years, and the horse survive, seems impossible, but just this thing happened to a valuable animal owned by Allen D. Eakle, near Carbondale, which died a few days ago. A veterinarian held a post-mortem examination as to what caused the horse's death, and a whip was found protruding from the stomach. Mr. Eakle, in October, 1895, used a six-foot buggy whip to punch an obstruction down the horse's throat, putting a horsehoe in the animal's mouth to keep it open. The horseshoe fell out, and the horse bit off the whip, swallowing the long end, with no bad effects until a short time ago, when the beast sickened and died. After swallowing the whip, the horse worked every day and ate three meals a day."

THE GOVERNMENT NEW ANTI-HOG CHOLERA SERUM.—The extensive experiments carried on by the Bureau of Animal Industry last summer, in Page County, Iowa, have proven very satisfactory, as will be seen by the following report of Chief Salmon to the Secretary of Agriculture:—"I have the honor to state concerning the experiments made during the past summer for the control of hog cholera that the treatment with anti-toxin serum gave even better results than were expected from it, and that this method constitutes a satisfactory plan for treating the disease and preventing by far the greater part of the loss. This method is the outgrowth of experiments that have extended over the past twelve years. Every point in the process is based upon careful and extended scientific experiments and there can consequently be no doubt of the efficacy of the treatment, although many details in the preparation of the serum will no doubt be modified. This serum is made upon the same principle as the anti-toxin of diphtheria, which has given such extraordinary results in the treatment of that disease. We have used both horses and cattle and have obtained good serum from both species of animals. In order to obtain the serum a horse or a cow is inoculated with the hog cholera virus, beginning with small quantities and repeating the inoculation with larger doses after suitable intervals of time, until the resistance of the animal is raised to the highest practical point. The blood of such an animal when injected under the skin of swine has both a preventive and curative action. As there are two diseases of swine—hog cholera and swine plague—to be combated we have prepared a compound serum which acts as a preventive and cure for both diseases. This serum was first tested on small animals in the laboratory and found to prevent the disease in them, and last fall it was tested in Page County, Iowa, upon eight herds of swine containing 278 animals. The owner of one of these herds, containing thirty-four animals, did not carry out the directions for the care of his animals and began treating them with some proprietary medicine. He also is said to have killed some for examination, so that with this one herd it is difficult to learn the exact effect of the remedy. However, including this herd there were but fifty-nine animals lost out of 278, or 21.3 per cent., while in untreated herds which were kept under observation about 85 per cent. of the animals died. Leaving this one herd, from which definite returns as to cause of death could not be obtained, out of the calculation there, were 244 animals treated, of which eighty-six were sick and only thirty-nine died. Consequently 82.8 per cent. of the animals in these herds were saved.

As a better quality of serum can undoubtedly be prepared with more experience it is reasonable to suppose that this percentage can be maintained hereafter. The cost of this serum is about ten cents per head of animals treated, one dose being sufficient. I would recommend that the serum, at least for the next year, be made by the bureau and distributed in large quantities, in order to demonstrate its efficacy upon a more extended scale. If this is not done its manufacture will be undertaken by numerous private concerns, which will charge exorbitant rates and which will be tempted to supply an inferior product. As the farmers will have no way of determining the quality of this before purchase they will be greatly imposed upon and may lose faith in the remedy before they have properly tested it. The losses from cholera have been enormous during the past few years, reaching, according to some estimates, a hundred million dollars a year. Congress has appropriated an abundance of money for the investigations, and now that a remedy has been discovered it will be of even more benefit to the stock-raisers of the country to put that remedy in their hands at as early a date as possible. It requires from three to four months to put a horse or a cow in condition to supply the serum, consequently any action taken for this year should be begun soon. In my opinion the bureau should be in position to furnish 2,000,000 doses of serum during the next year. To do this would require an expenditure of about two hundred thousand dollars. I would therefore recommend that Congress be asked to add this amount to the apporiation for the bureau, and to make $100,000 of it immediately available."

POSITION WANTED.

An M. R. C. V. S. (Lond.), 10 years in practice, part of time lecturing, would join V. S. in large city practice with view to succession or would act as locum tenens during absence of V. S. Address ARTHUR BLAKE, Nailsworth, Gloucestershire, England.

FOR SALE.

A substantial and commodious brick veterinary infirmary, office and residence, centrally located in a thrifty city of 25,000, and surrounded by a very rich agricultural and breeding country.

The leading practice of the entire region has for fifteen years been and is still being conducted in this property.

It is offered at less than 60 per cent. of cost, with cash payment sufficient to insure sale, balance at low interest and as long time as may be asked.

An exceptional opportunity for an energetic, up-to-date man.

Address W. L. WILLIAMS, Cornell University, Ithaca, N. Y.

AMERICAN VETERINARY REVIEW.

MARCH, 1898.

All communications for publication or in reference thereto should be addressed to Prof. Roscoe R. Bell, Seventh Ave. & Union St., Borough of Brooklyn, New York City.

EDITORIAL.

AN INTERESTING DISCUSSION.

The members of the progressive Chicago Veterinary Society have undertaken the enormous task of drafting a guide to aid veterinarians in determining a sound from an unsound horse while under professional examination for soundness. The original intention of the Society was developed in the appointment of a committee to formulate a list of the blemishes which are most frequently found at such examinations and to assign them to different categories, such as "soundness," "unsoundness," and "serviceable soundness"—so that there might be uniformity among examiners in their estimates of the quality of animals submitted to them for their professional opinions, hoping thus, possibly, to relieve them from harsh individual criticism and to protect them in case of legal contest. The chairman of that committee, Dr. Hughes, after very carefully going over the field with his associates, reported to the December meeting of the Society that the subject was entirely too large for the committee to deal with, and pointed out 140 blemishes which are the subjects of consideration in the examination of horses for soundness. He then made the very wise suggestion that the whole matter be discussed by all the members in open session, a certain number to be brought before each monthly meeting, and that members be assigned by the President to lead the discussion upon them. This course was adopted, and as a result the REVIEW is enabled to present its readers with the discussion upon the first two installments, presented at the January and February meetings, and consisting of abnormalities, defects, and diseases in and near the buccal cavity.

That such a discussion by the members of the Chicago Society must be of absorbing interest to their brethren everywhere is self-evident. While theoretical medicine is entrancingly fascinating, nothing so appeals to him who is actively engaged in the practice of veterinary medicine and surgery as subjects connected with his every-day duties ; the elucidation of problems which perplex him during the routine of his visits ; the points of opinion which cause him to wonder if he is less capable of arriving at conclusions than others. To bring forward defects and diseases and discuss them openly, interchanging deductions made by experience and careful study, must be of more service than abstract theories deduced from simple reasoning. It is the practical conception of veterinary societies,—the dissemination of knowledge and mutual benefit, and we are firmly of the opinion that the example set by the Chicagoans is not a bad one to be followed by all other similar associations, especially those in large cities which meet monthly, such as the Veterinary Medical Association of New York County and the Keystone Association of Philadelphia.

That the Society will fail to achieve the avowed object of the monthly discussions does not affect the good which they will do. That no "guide" can be drafted, we are reasonably certain, and that none can be we are thankful. Medicine is an inexact science, and this assertion is more applicable to veterinary than human medicine. If the presence of certain defects constituted unsoundness and the absence of certain other ones fulfilled the requirements of soundness, veterinarians would not be the only persons capable of examining horses to determine these points. A horseman of only moderate ability would be able to perform such services. But the very fact that the determination requires knowledge of anatomy, physiology, and pathology, with ripe experience, makes the opinion of the examiner of value ; gives scope for individual estimate, based upon the ability of the man. Every veterinarian knows that there can be no hard-and-fast rule by which an animal may be judged. A curb, a splent, a wind-puff or what-not may in one case be an absolute unsoundness; in another an innocent blemish. The veterinarian is the proper source from which to obtain an opinion as to whether it is a harmful defect or a harmless blemish. And that is why so much of the revenue of the veterinarian is derived from examinations; and that is why gentlemen in the cities now refuse to consummate an agreement to purchase until the veterinarian's certificate has been obtained. The very uncertainty of the question is the surest perpetuation of the custom.

For the purpose of assisting examiners to give valuable and conscientious opinions in their certificates, the discussion now going on in the Chicago Society is a matter of the greatest importance, and we congratulate them and the profession at large on the opportunity.

MEDICAL EDUCATION IN THE EMPIRE STATE.

For the past few months the REVIEW has endeavored to lay before its readers the effects of the law passed by the New York Legislature a few years ago placing the medical schools—medical, veterinary, and dental—under the full control of the Board of Regents. That is to say, the qualification of those applying to matriculate was to be in accordance with the standard set by the Board, and, if admitted, they were again to be examined by the Regents, through their State Examining Board, to ascertain if the school in which they had pursued their professional studies had instructed them sufficiently to meet their conception of the requisite amount of knowledge which they should possess. We have never found fault with this system of supervision of our educational interests, but have applauded it louder possibly than any other medical journal in the State; we have hailed the advent of higher education with enthusiasm, and have felt no little pride in the fact that the senior editor has devoted his whole professional life with a zeal that only those possessed of his indomitable energy could in contributing his mite to laying the corner-stone upon which is finally to be built the grand edifice of veterinary education. But we have found fault with the extreme and radical method which has been pursued, and we do so in the interests solely of that advancement which has been so ardently sought for and worked for.

We give considerable space this month to an important communication from Prof. W. L. Williams, of the New York State Veterinary College, who plainly states that his views are at variance with those held by us. While his letter bears the stamp of sincerity and logical reasoning, it must be conceded that it would be singular indeed if the opinions he so well expresses did not find lodgment with him, for the reason that the interests which are nearest to him are the ones fostered and encouraged by the statute in question. He fears, from the remarks of the REVIEW, that an effort is making to "wipe out" the entrance examinations; and yet no such effort has been even hinted at in these pages. We have asked for a modification of the ridiculous requirements—in the name of our honored institutions, our integrity, and in the name of higher education; modification, which means perpetuation, and the ability to lift it higher and higher, until it shall reach in time a more exalted standard than that with which we are at variance to-day. But not by that prohibitive bound ("abruptness"—W. L. W.) which sends students flying elsewhere and closes the doors of those schools which labored by love to advance the profession inch by inch, and which have a right to participate in the glories which they have made possible.

The REVIEW exults that such institutions as the one adorned by the coöperation of Prof. Williams have been established, and feels assured that for teaching the higher branches of the medical sciences the private colleges cannot hope to compete; but we do not believe that simply because the State has endowed it with a handsome annuity that it furnishes just cause for that school to insist upon surrounding itself with laws that shall make it the sole representative of education in the State by crushing every competitor, so that its light may shine the more brightly.

No argument can exist where one side alone is heard, and we welcome the words of the writer for the purpose which they serve, which is to exhibit the object of the law. With a profound air of heroic duty performed, he says that we have placed the standard high and will await the time when the profession shall grow up to it—pointing to the old European countries maintaining such a status as examples of its successful coition, without apparently reflecting that the profession was more than a century old in France and Germany when the seeds were first sown in America to germinate and grow. At the same rate of development his standard will have to tower above the profession for the next hundred years to catch up to the examples he points to.

In the meantime, we have it upon the best of authority that the Regents are appalled at the results of the 48-counts upon the scientific schools of the State, and one high in authority in their councils has made the prediction that at the same ratio of decrease all except endowed institutions will be without students in a year or two. The endowed schools are "successful" if a single student attends regularly, for by that means the quality is high if the quantity is low—and the faculty will be enabled to draw their stipend just the same. With grand facilities, both in appliances and in faculty, free as the air of Ithaca, is it not passing strange that, if the law is going to benefit the profession at large, that there was not an influx of students at the State College, instead of a little handful of students who have to be counted twice in order to make half a dozen?

Modify the law; keep it at a two-year high-school standard until it is reasonable to raise it further; build up instead of tearing down.

R. R. B.

DANGERS OF PRIVATE SLAUGHTER-HOUSES.

While in most large cities, slaughter-houses and abattoirs are more or less under sanitary regulations and veterinary inspections—and, again, while the inspection of meat is carried out in many places according to most correct sanitary conception—it is quite certain that there are many places yet where the slaughtering of animals, and of pigs principally, is not watched by inspectors, and from which, no doubt, various products of a more or less dangerous nature, can find their way to the markets and to the table of the most careful housekeeper. The fact is that, even with the execution of sanitary measures, the same accident may occur. An instance of this: In a large governmental school, where students are boarding, one of them, one fine morning, observed in a piece of sausage that was on his plate, a small, round, whitish mass, the size of a small hazel nut. Leaving aside the peculiar looking breakfast, he took it to one of his professors for examination. It proved to be a tuberculous glandular mass, containing bacilli, which, however, by the process of preparing the sausage, had been killed. Inoculated into guinea-pigs, they were harmless. The investigation made by the authorities of the school brought out the fact that the diseased meat came from a private slaughter-house submitted to veterinary inspection, and where, according to the statement of a butcher, a pig had been killed a while ago which had presented a few similar enlargements when it was dressed.

Moral:—Beware of suspicious-looking round masses which may be found in pigs' meat preparations.

ASSEMBLY BILL 555, introduced by Mr. Pickett, is an effort of the quacks to reopen the registration books of New York State until January 1, 1899, so that any person who has been practicing veterinary medicine for three years prior thereto can register by making affidavit to that fact. While there is scarcely any possibility for such a crime being consummated as is contemplated by this bill, the Legislative Committee of the New York State Veterinary Medical Society should not neglect their duty to make certain that its death is complete and not simply anæsthetized for the time being, to be resuscitated when the effects of their first protest have passed away.

ORIGINAL ARTICLES.

REMARKS ON THE NATURE AND THE DIFFERENTIATION OF THE INFECTIOUS SWINE DISEASES IN THE UNITED STATES.*

By Veranus A. Moore, B.S., M.D.

Professor of Comparative Pathology and Bacteriology. New York State Veterinary College, Cornell University, Ithaca, N. Y.

We sometimes hear that there is much confusion concerning the knowledge of the infectious swine diseases in the United States. Perhaps for a brief time early in the history of their investigation, this was the case, but at present our pathologists are, with possibly a very few exceptions, agreed on their morbid anatomy and etiology. There appears, however, to be an element of uncertainty concerning them entertained by a few writers, more especially among those who have not had an opportunity of studying them as they exist in epizootic form. The fact must be admitted, therefore, that while these diseases have been clearly defined in the official reports of the Bureau of Animal Industry, U. S. Department of Agriculture, and by pathologists and bacteriologists in other institutions, there have appeared, both at home and abroad, statements of a contradictory nature which have tended to confuse the reader of the recent literature upon this subject. The difficulty, however, is in the interpretation rather than in the lack of the existence of definite knowledge concerning the nature and cause of these maladies. Although our knowledge of their natural history is far from being complete, no one familiar with the facts, as they are recorded, can feel that American swine diseases have not been carefully investigated.

As the advance in human medicine depends so largely upon the results of comparative and experimental pathology, it is highly important that the nature of the maladies in question should be clearly understood, for among animal diseases there are none which are more analogous to certain human affections than these bacterial plagues of swine. If the suggestion that this subject should be opened for discussion was correctly interpreted it was for the purpose of having some of the essential features of these diseases, as they have been determined by American investigators, again pointed out that their differences and their independent existence could be more fully appreciated. As I understand the situation all elements of confusion will be removed if the following questions can be clearly and fully answered:

---

* Read before the Section of Pathology and Bacteriology of the British Medical Association at the Montreal meeting, Sept., 1897.

1. Concerning the nomenclature of infectious swine diseases in Europe and America. Which of the names given to the diseases of swine are synonyms of hog cholera, which of swine plague, and which represent other affections?

2. Concerning their morbid anatomy. What are the lesions characteristic of hog cholera and what are those diagnostic of swine plague?

3. Concerning their etiology. What are the morphological characters, biochemic and pathogenic properties by which the hog-cholera and swine-plague bacteria can be differentiated?

In a paper of this length it is impossible to answer these questions in detail, but it is hoped that some of the essential truths may be pointed out and that references * may be given to such papers and reports that any who may desire, can find the entire story, as it is known at the present time, in our most authoritative publications.

In the United States of America two infectious diseases peculiar to swine have been described under the names of hog cholera and swine plague. The third malady—swine erysipe-

---

* In citing the literature, reference is made simply to the more important papers giving the results of original investigations which have been made in this country. The criticisms, controversial writings and more popular articles must. for want of space, be omitted. An abstract of nearly all the papers relating to these diseases may be found in the Jahresbericht über die Leistungen auf dem Gebiete Veterinär-Medicin, and also in Baumgarten's Jahresbericht, 1885-1896.

las, *rouget* or *Rothlauf*—peculiar to this species has not been found to be the cause of destructive outbreaks, although an organism closely related to, if not identical with, the bacillus of rouget has on at least three occasions * been isolated from swine. In each of these instances it was obtained from one animal only. Omitting, therefore, from this discussion this possible, but as yet in America unrecognized disease, we pass to the consideration of the two maladies first mentioned.

The investigation into the nature and cause of infectious diseases among swine was undertaken by the U. S. Department of Agriculture more than twenty years ago. Among the reports of the earlier investigators is one by Prof. James Law,† in which we find the lesions carefully described and a list of seventeen names under which the then supposedly single disease existed. Among these are hog cholera, enteric fever, gastro-enteritis, and others suggestive of the external manifestations of the disease such as erysipelas, measles and scarlatina, but none to indicate pneumonia or lung lesions of any kind. In consulting the earlier literature on swine diseases in England, we find practically the same nomenclature. The descriptions of the morbid anatomy are likewise very similar, and writers in both countries, but more especially Dr. Budd of England, have pointed out the similarity of this disease to typhoid fever in man. Up to the time of the investigations about to be mentioned, however, the opinion seems to have been that there was but one infectious disease peculiar to swine in America. In 1885 the investigators in the U. S. Bureau of Animal Industry discovered and described ‡ its specific organism. The disease was given the name swine plague and its organism was designated the bacterium of swine plague.

---

* Smith, Report of the Bureau of Animal Industry, U. S. Department of Agriculture, 1885, p. 196.

Ibid., 1895–96, p. 166.

Moore, The Journal Compar. Medicine and Vet. Archives, 1892, p. 333.

† Report of the U. S. Commissioner of Agriculture for 1875.

‡ First Annual Report of the Bureau of Animal Industry, U. S. Department of Agriculture, 1885, p. 212.

A summary of the results of the yearly investigations of the Bureau of Animal Industry may be found in the Annual Reports of the U. S. Department of Agriculture for 1884–1893.

In the following year (1886) Dr. Theobald Smith * discovered another bacterial disease among swine. It was found to be similar to the German *Schweineseuche*, both in its morbid anatomy and in the morphology and properties of its specific organism. In naming this disease the Bureau of Animal Industry called it, on account of its similarity to the German *Schweineseuche*, swine plague, and its organism the bacillus of swine plague, and changed the name of the disease described in 1885 to hog cholera and its organism to the bacterium † of hog cholera. The changing of the name of the first disease described from swine plague to hog cholera has been the cause of some criticism and it has been credited with the responsibility of creating confusion. It has, perhaps, led hasty readers to a misinterpretation of these diseases and their relation to those described in other lands under different titles. While the names assigned may not have been especially happy ones, the transfer of swine plague from the intestinal to the lung disease must be considered as a fortunate occurrence and one which tended to simplify and not to confuse.

Dr. F. S. Billings, of the Nebraska State Experiment Station, opposed this classification. He not only refused to accept the change and continued to write about hog cholera under the title of swine plague, but he denied the existence of the swine plague, as described in the reports of the Bureau of Animal Industry for 1886 and subsequently, as an independent disease. The wide dissemination of his publications on this subject has unquestionably been responsible for much of the haziness concerning the distinguishing features of these diseases.

In 1893 Drs. Welch and Clements ‡ read a paper before the

---

* Second Annual Report of the Bureau of Animal Industry, 1886.

† In 1888 the genus *Bacterium* was changed to *Bacillus* and this organism is spoken of since that time as the hog-cholera bacillus.

‡ Welch and Clements, Remarks on Hog Cholera and Swine Plague, First Internaional Congress of America held in Chicago, Ill., October, 1893.

International Veterinary Congress in which they gave a very clear history of the nomenclature of these diseases and in which they adhered to the classification of the Bureau of Animal Industry.

They also included in this paper the results of their investigations of numerous outbreaks of hog cholera, often complicated with swine plague, in the State of Maryland. The very few points in the pathology on which they differ from the conclusions of the Bureau will be referred to in later paragraphs.

In order that this part of the subject may be as clear as possible I have appended a partial list of the names assigned to those swine diseases which have been found to be identical with, or closely related to, the American hog cholera and swine plague. The results of the more important of the large number of special investigations which have been made in both the United States and in Europe to determine these facts have been largely brought together in the writings of Drs. Smith and Welch, who themselves have done most to elucidate our knowledge of these affections.

SYNONOMY.

COUNTRY.	DISEASES.	
	Hog Cholera.	Swine Plague.
United States . . .	Hog Cholera[1]	Swine Plague[1]
" " . . .	Swine Plague[2]	
England	Swine Fever[3]	
"	Pneumo-enteritis[4]	
"	Pig Typhoid[5]	
Denmark and Sweden	Svinpest[6]	
" " "	Svinediphteritis[7]	
France	Pneumo Entérite du Porc	
"	Hog Cholera[8]	
Germany		Schweineseuche[9]

1. Salmon and Smith. Annual Reports of the Bureau of Animal Industry, 1885 and since that time.

Salmon. Special Report on Hog Cholera, its History, Nature and Treatment. *Ibid.*, 1889.

Smith. Special Report on the Cause and Prevention of Swine Plague. *Ibid.*, 1891.

Welch. Report of Investigations concerning the Causation of Hog Cholera. Johns Hopkins Bulletin, No. 1, 1889.

I am not familiar with authoritative statements of the existence of hog cholera or a like disease in Germany. The same is true of swine plague in France. The disease described by Cornil and Chantemesse as being identical with Schweineseuche was found not to be swine plague but probably hog cholera. With swine plague in Germany and hog cholera in France it is probable that both of these diseases may be found in each of these countries. Whether or not swine plague exists in England I will leave for her pathologists to answer.

CONCERNING THE MORBID ANATOMY OF HOG CHOLERA AND SWINE PLAGUE.

In the reports of the Bureau of Animal Industry hog cholera is described as occurring in two forms, acute and chronic. In the first the lesions are of a congestive or hæmorrhagic nature, while in the second they are characterized by distinctive tissue changes such as the "button" ulcers in the intestines, especially the cæcum and upper colon, enlarged and discolored spleen, enlarged and often hæmorrhagic lymphatic glands and usually hepatic and renal changes. Broncho-pneumonia is occasionally present. The chronic form is most frequently encountered.

Welch and Clements* look upon the formation of the "but-

---

* *Loc. cit.*

Smith. Zur Kenntniss der Amerikanischen Schweineseuche. Zeitschrift für Hygiene, 1891, S. 480.

Smith. Zur Kenntniss des Hogcholerabacillus. Centralblatt für Bakteriologie und Parasitenkunde, Bd. IX. (1891) S. 253.

2. Billings. Bulletins Neb. Agricultural Experiment Station 1888. Also many special publications and contributions to various veterinary journals.

3. Brown. Report of the Agricultural Department, London, 1886.

4. Klein. Seventh annual report, Local Government Board, London, 1877. Virchow's Archiv, 1884, Bd. XCV., S. 468.

5. Budd. Veterinarian, 1865, p. 521.

6. Selander. Centralblatt für Bacteriologie und Parasitenkunde, 1888, i. S. 362.

7. Lundgren. Ref. Jahresbericht de Veterinär-Medicin, 1889.

8. Metschnikoff. Annales de l'Institut Pasteur, VI., 1892, p. 289.

9. Loeffler. Arbeiten aus dem kaiserlichen Gesundheitsampten. Bd. I., (1885) S. 51.

Schütz. *Ibid.*, S. 376.

ton" ulcers as the most diagnostic of the lesions. These, of course, do not appear in the acute type where death occurs in a very short time, and consequently they cannot always be relied upon in making the diagnosis. During the last year we have seen the disease in its congestive or hæmorrhagic form, as described in the Bureau Reports, and the diagnosis was confirmed by obtaining pure cultures of the hog-cholera bacillus from the blood, liver and spleen. As pointed out by Smith, this form of the disease is rare. Welch and Clements mention it in cases produced by the intravenous inoculation of pure cultures, but it seems that they did not meet with it in more natural outbreaks. Space does not permit of a more extended account of the morbid anatomy as a wide range of lesions or modified forms is admitted. Suffice it to say, that the tissue changes found in a typical case of chronic hog cholera are quite analogous to those described in a similar case of typhoid fever in the human subject.

Swine plague is considered by Smith* to be an infectious pneumoenteritis as the intestines are frequently involved, but more often the lesions are restricted, for the greater part, to the lungs and pleura, and hence it is also called an infectious pneumonia. The morbid changes in the intestines usually consist, when present, of a superficial necrosis of the mucous membrane rather than distinct ulcers as in hog cholera. He describes it as an independent disease although frequently complicated with hog cholera. On this point there is some difference of opinion. Billings denies its existence excepting as a secondary infection. Welch and Clements * have not found outbreaks of pure or uncomplicated swine plague such as occur of *Schweinseuche* in Germany, but they have reported isolated cases and do not doubt the possibility of its occurrence in epizootic form. It was found by them, as it frequently appeared in Smith's investigations, complicated with hog cholera or with lesions which they believed to be due to the hog-cholera bacillus. The disentangling of the lesions of these two diseases has been difficult, perhaps the most so of any of the problems encountered in their investigation, and it will still be necessary to have the results of other and repeated observations before we can fully describe the range of morbid anatomy possible in either affection. Perhaps of the mooted questions the most important is in regard to the existence of swine plague in epizootic form.

---

* *Loc. cit.*

Concerning swine plague as an independent disease the following, and heretofore unpublished observations, are of special interest. In the late fall of 1895 I had occasion to spend a few weeks with Dr. C. N. Hewitt, of the State Board of Health, studying an infectious swine disease in southern Minnesota. During this period we made careful post-mortems, and as thorough a bacteriological examination as it was possible under the circumstances, of one or more animals in each of twenty-nine herds. In many of these cases the lesions were largely restricted to the lungs, the digestive tract being normal. On the other hand, the ventral, cephalic and cephalic portion of the principal or caudal lobe of one, and usually of both lungs, were hepatized. As a rule there was no pleuritis. Pure cultures of the swine-plague organism were obtained, and rabbits inoculated with pieces of the hepatized lung from a few of the animals, died in from 16 to 48 hours of septicæmia, due to the swine-plague bacillus.

In a few cases the lesions varied from this form. Thus in one instance, a pig, of about thirty pounds weight, exhibited a slightly enlarged spleen, hæmorrhagic kidneys, and small areas of slight hyperæmia of the mucous membrane of the intestine. The tips of the ventral lobes of both lungs were collapsed. From the kidney, pure cultures of a very virulent swine-plague organism were obtained. Rabbits inoculated with a bit of the cortex of one of the kidneys died in 16 hours and from its organs pure cultures of swine-plague bacteria were secured. In a few herds, especially those near villages where the pigs were fed largely on kitchen refuse, there were a considerable variety of lesions from which *Bacillus coli communis* and other bacteria were isolated, but, so far as I was able to determine, the bacillus of hog cholera was not present. In these cases the swine-plague bacillus was obtained.

The disease in these herds invariably ran a rapidly fatal course, and in many herds over ninety per cent. of the hogs died. The most pronounced symptom observed was a severe cough which was brought on if the sick animals were forced to run. This, with the refusal of food, were the only ones reported by the owners. The origin of the disease had been traced by several local health officers to a drove of swine which had been brought into the locality and sold. While these observations cannot be considered as conclusive evidence of the singleness of the disease, as a careful bacteriological examination was not made of all of the animals which died in a single outbreak, the occurrence of uncomplicated pneumonia in animals in various stages of the disease in the different herds is highly suggestive that the disease was pure swine plague in epizootic form.

During the past year I have examined several animals from a number of outbreaks of infectious swine disease in the State of New York. In two of these outbreaks the lesions found in the pigs examined were pneumonia with and without pleuritis. The spleens were usually enlarged. The intestines were not affected. The bacteriological examination revealed the presence of swine-plague bacteria, but hog-cholera bacilli were not found. In a few outbreaks there were mixed infections such as described by Smith, and later by Welch and Clements.

These investigations support the conclusions of Dr. Smith that swine plague is an independent disease although it often exists associated with hog cholera. An explanation for the frequency of the latter condition will be suggested in a later paragraph.

To summarize, the differentiation of these diseases by their morbid anatomy is, in typical cases, not difficult. In hog cholera there are ulcers in the intestines with enlarged and often hæmorrhagic lymphatic gland, engorged and darkened spleen, and usually changes in the kidney and liver. In swine plague there is more or less hepatization of one or both lungs with or without pleuritis. There may be slight morbid changes in the abdominal organs. In the atypical cases, which the reports show are very numerous, there may be marked variations in the nature of the lesions. In fact, the course of either disease may become so changed that its nature cannot be determined at the post-mortem. In these, and in very acute cases where either disease may become a septicæmia, the macroscopic examination must be supplemented by the results of a bacteriological investigation before a positive diagnosis is warranted. The only final test of the nature of the disease is the character of the bacteria responsible for it.

THE BACTERIA OF HOG CHOLERA AND SWINE PLAGUE.

The various accounts of the specific bacteria of hog cholera and swine plague have led to more confusion than those relating to their morbid anatomy. These bacteria have been fully and clearly described in the reports of the Bureau of Animal Industry and in certain other publications. In addition to the original descriptions, the differences between these two species have been pointed out repeatedly by pathologists in other countries, especially in Germany. Notwithstanding, errors have appeared either through accident or misinterpretation. Thus, Schoug[*] decided from his bacteriological investigations that hog cholera, swine plague and Schweineseuche were identical. Selander[†] and Metschnikoff[‡] published some startling results from investigations with the bacillus of hog cholera and which they stated was identical with the bacillus of American hog cholera (Salmon). Their experiments were carefully repeated in the Bureau of Animal Industry with conflicting results. Those of Selander were also repeated by Prof. Welch with a similar outcome. Upon examination of the organism with which they worked, a culture of which was kindly sent to Dr. Salmon by Metschnikoff, it was found to be the bacillus of swine plague. The results which they had reported were not strikingly different from those which we have obtained under certain conditions, with the swine-plague organism. To understand their results, in the light of those obtained in this country, it is necessary to read swine plague where they have written hog cholera. By doing this, the confusion which otherwise will be caused by their articles on the hog-cholera bacillus will be avoided.

---

[*] Ref. Jahresbericht der Veterinar-Medicin, 1889.

[†] Annales de l'Institut Pasteur, IV. (1890), p. 543.

A report of the experiments made to verify Selander's statements in this article are given in Bulletin No. 6, Bureau of Animal Industry, 1894, p. 97.

[‡] *Loc. cit.*

In the last edition of his Text Book of Bacteriology and Infective Diseases, 1897, Crookshank writes that, "the bacillus isolated by Loeffler and Schütz from swine fever in Germany (*Schweineseuche*) has been identified with the bacillus isolated by Salmon and Smith from hog cholera in America, and with the bacillus of rabbit septicæmia and of fowl cholera." Such statements are certainly confusing.

Again we find the influence of Billings' interpretations, published long after the bacteria in question were described, in which he states that the bacillus of swine plague* is actively motile. During the past year I have received statements from two distinguished bacteriologists of the existence of motile swine-plague bacilli. This is important, for it shows an unmistakable error somewhere. If we have been in the wrong concerning the motility of this organism, we are ready upon sufficient evidence to retract, but thus far we have not observed either independent movement or the organs of locomotion (flagella) on this species of bacteria. It is not surprising, however, that after the appearance of so much literature in which the swine-plague bacillus has been assigned the morphology and properties of the bacillus of hog cholera that confusion should arise.

In comparing these two species of bacteria it is necessary for our purpose to call attention simply to their more essential properties which may be considered of differential value. In order that these may be more easily contrasted I have arranged them in like order in parallel columns.

---

* He is writing of the disease known to the Bureau of Animal Industry as hog cholera.

Bacillus of hog cholera.	*Bacillus of swine plague.*
1. Rod-shaped organism with ends rounded, 1.2 to 2.0μ in length, 0.5 to 0.8μ in width. The size varies according to the stage of growth and division, and the culture media.	1. Elongated oval organism 0.8 to 1.5μ in length, 0.6 to 0.8 in thickness. The size varies according to the stage of growth and division, and the culture media.
2. From cultures it stains entirely. In tissues it usually stains around the periphery with darker extremities leaving a light centre.	2. From old cultures it usually stains entirely. When in process of division as found in the organs of freshly dead rabbits the extremities stain leaving an unstained central band, "polar stain."
3. Actively motile in liquids.	3. Not motile in liquids.
4. From 3 to 9 flagella are demonstrable.	4. No flagella have been found.
5. Vigorous growth in alkaline nutrient liquids. Less vigorous if liquids are acid in reaction.	5. Growth moderate or feeble in alkaline nutrient liquids. No growth if liquids are acid.
6. Moderate growth on potato. (Varies according to reaction.)	6. No growth on potato.
7. Distinct growth on gelatin.	7. Feeble or no growth on gelatin.
8. Saponifies milk in from 3 to 4 weeks.	8. Produces no apparent change in milk.
9. Ferments dextrose with the formation of acids and gas.	9. Ferments dextrose with the formation of acids but no gas.
10. Does not ferment lactose. Bouillon containing it becomes strongly alkaline. No gas.	10. Does not ferment lactose. No gas.
11. Does not ferment saccharose. Bouillon containing it becomes strongly alkaline. No gas.	11. Ferments saccharose with the formation of acids. No gas.
12. Destroyed by moist heat at 58° C. in 15 minutes.	12. Destroyed by moist heat at 58° C. in 7 minutes.
13. Dies in water in from 2 to 4 months.	13. Dies in water in from 10 to 15 days.
14. It dies in the soil in from 2 to 3 months.	14. It dies in the soil in from 4 to 6 days.
15. Rabbits injected subcutaneously with 0.1 c.c. of a bouillon culture of a virulent bacillus will die in from 5 to 7 days. Enlarged spleen, necrotic foci in liver.	15. Rabbits injected subcutaneously with 0.01 c.c. of a bouillon culture of a virulent bacillus will die in from 16 to 20 hours. Septicæmia.
16. Rabbits inoculated with culture of an attenuated variety live from 10 to 20 days or recover. The lesions are enlarged spleen, and infiltration of the follicles in Peyer's patches.	16. Rabbits inoculated with a culture of an attenuated variety will live from 4 to 10 days. The lesions are local infiltration of pus cells with pleuritis, pericarditis or peritonitis.
17. In guinea-pigs the lesions are practically the same as in rabbits. Death occurs in from 7 to 12 days.	17. Guinea-pigs are slightly less susceptible than rabbits. There is more local reaction. Death occurs in from 1 to 4 days.

18. Pigs are not usually affected by subcutaneous injection of small quantities of culture. If the pigs are killed within 1 to 3 weeks the bacilli are found in the local lesion and certain of the lymphatic glands.* Fatal results are reported in a few cases by these injections.	18. Pigs are not usually affected by the subcutaneous injection of small quantities of culture. The bacilli are not found except in the local lesion. In a few cases fatal results are reported.
19. Feeding cultures to pigs which have fasted for 24 hours produces extensive intestinal lesions with fatal results.	19. Feeding cultures to pigs usually produces no effect.
20. Intravenous inoculation into pigs causes either an acute septicæmia or a chronic form of the disease in which are produced quite typical round, firm, elevated ulcers.	20. Intravenous inoculation into pigs usually produces a septic form of the disease which kills in from 1 to 2 days. Inoculation into the lungs causes pleuritis, usually accompanied with pneumonia.

---

* Moore, What becomes of hog-cholera and swine-plague bacteria when injected subcutaneously in small quantities in pigs. Bulletin No. 6, Bureau of Animal Industry, 1894, p. 101.

The results of inoculation experiments with these bacteria are conclusive in establishing their causal relations to their respective diseases. In explaining the differences in results reported by different investigators the method, age, and kind of culture and the degree of virulence of the bacteria used, together with the age and condition of the swine inoculated, must be taken into consideration.

Several varieties of the hog-cholera bacillus have been recognized. As early as 1890 Smith * called attention to a variety of this organism which was more saprophytic in its tendencies than the form usually encountered. In 1894 he described seven varieties † of the hog-cholera bacillus which had been isolated from swine. These varieties differ either morphologically, in the character of their growth on ordinary media, in the quantity of gas produced in glucose bouillon or in their pathogenesis for rabbits. In addition to these, Smith places the bacillus found by him in aborting mares,‡ *Bacillus enteritidis* of Gaertner and *Bacillus typhi murium* of Loeffler in this group.

---

* New York Medical Journal, Nov. 1, 1890, p. 485.

† These are designated as *B. choleræ suis* $\alpha,\beta,\gamma,\delta,\varepsilon,\zeta,\eta$. The hog-cholera group of bacteria. Bulletin No. 6, Bureau of Animal Industry, 1894.

‡ Bulletin No. 3, Bureau of Animal Industry, 1893.

Through the kindness of Dr. D. E. Salmon, I received, about two years ago, from Prof. Mereshkowsky,* of St. Petersburg, a culture of the bacillus which he found to produce a fatal disease in ground squirrels. A careful study of this organism shows that it belongs to the hog-cholera group, and at present I am studying a culture of the hog-cholera bacillus which appears to differ slightly from all those heretofore mentioned. Without entering into a discussion of the varieties of this species, suffice it to say that *B. choleræ suis α*, as described by Smith, stands, by virtue of the priority of its discovery, as the type. There are closely related to this a considerable number of important bacteria, some of which have been described under quite different names. Although some of them have been found to approach in their biochemic properties *B. coli communis* the bacillus of hog cholera stands as a clearly defined and distinct species of pathogenic bacteria.

The bacillus of swine plague and its varieties have not been so systematically classified. It is of interest to note, however, that the bacilli of rabbit septicæmia, fowl cholera and of certain diseases of cattle are thought to be identical with it. They have not been differentiated in their morphology or cultures. In grouping these bacteria the fact should be recognized that experimentally these bacteria are not interchangeable in their pathogenesis except for the rabbit. Thus an epizootic form of fowl cholera has not been produced with the swine plague or rabbit septicæmia bacilli. Further, it has been shown † that in the upper air passages of healthy swine, cattle, horses, cats and dogs there are bacteria not distinguishable in their cultural characters and their effect upon rabbits from the swine-plague bacillus. The presence of this organism in the trachea of healthy pigs has been suggested as the cause of sporadic cases of swine plague and it may explain the frequent association of swine plague with hog cholera. What the conditions are by which these bacteria are enabled to produce disease in their host have not been clearly pointed out. The pathogenic organism associated with the lesions in certain forms of bronchopneumonia in cattle differs very slightly from this. In human pathology we find a striking resemblance in *Micrococcus lanceolatus* * to the swine-plague bacillus. While there are differences between the behavior of this organism and the swine-plague bacillus, its manifold and varied pathogenic possibilities and its distribution in normal human saliva are worthy of notice in this connection.

---

* Centralblatt für Bakteriologie und Parasitenkunde, XVII. (1895.) S. 742.

† Smith. Special report on swine plague, 1891, p. 109.

Moore. Appendix special report on swine plague, 1891, also Bulletin No. 3, Bureau of Animal Industry, U. S. Department of Agriculture, 1893, p. 38.

Fiocca. Centralbl. f. Bakteriol. u. Parasitenk. Bd. XI., S. 406.

The investigations thus far made show these bacteria to be present in 48 per cent. of healthy swine, 80 per cent. of cattle, 50 per cent. of sheep, 16 per cent. of horses, 90 per cent. of cats, and 30 per cent. of dogs.

If we take the rabbit as the animal on which to test the pathogenesis of the bacteria belonging to the swine-plague group we find that those from different sources are very similar. In nature, the bacilli of swine plague, rabbit septicæmia, fowl cholera, and those located in the normal upper air passages of the various species of animals mentioned exist possessed of marked variation in virulence, that is, those which will kill a rabbit when inoculated subcutaneously with pure culture in from 16 to 24 hours to those which require from 3 to 10 days to destroy life. With the variations in the length of time we have corresponding differences in the lesions. Thus the virulent forms produce septicæmia while the attenuated varieties excite a severe purulent infiltration about the place of inoculation and exudates on one or more of the serous membranes. Conversely, it has been shown that rabbits possessed of a certain amount of natural or artificially produced resistance will, when inoculated with a virulent culture, die after the same period of time and with lesions similar to those produced by the attenuated virus in the susceptible rabbit, or, if the resistance approaches in degree to immunity the lesions may be restricted to single or multiple abscesses which develop slowly in various parts of the body. In hog cholera the course of the disease may also be changed. In rabbits the lesions become localized in the digestive tract, and in guinea-pigs there is a formation of nodules, usually beneath the peritoneum, resembling somewhat closely in appearance miliary tubercles. This relation between the degrees of virulence of the bacteria on the one hand and the relative resistance of the animal body on the other has been expressed * by the simple formula $d = \frac{v}{r}$ in which $d =$ the type of the disease, $v =$ the virulence of the bacteria, and $r =$ the resistance or degree of immunity of the animal used. By changing either virulence or resistance the type is changed.

---

* Welch Bulletin Johns Hopkins Hospital, III., 1892, p. 125.

A careful study of the details of the methods by which the course of these diseases may be modified shows that there is a marked difference between hog cholera and swine plague in the ease with which they are diverted from their more usual manifestations. Again, when they are studied in their most varied and extreme modifications we find that they differ quite as much as do the lesions produced by the virulent bacteria in susceptible animals. In both affections the modified forms tend to the production of a type of disease simulating that in the larger, more resistant species of animals, such as swine.

Another, and I believe important differential feature, is found in the behavior of experimental animals to immunizing treatment. With hog cholera, rabbits have not been immunized excepting with attenuated living cultures, and then with much difficulty. On the other hand, guinea-pigs are immunized by means of injections of sterilized cultures, sterilized blood of affected animals or the serum from immune animals. With swine plague, both rabbits and guinea-pigs can be made resistant to the strong virus by these methods. The very marked difference in the effect on rabbits of the immunizing agents of the two diseases is noteworthy. Again and still more significant is the fact that guinea-pigs made immune to hog cholera offer no resistance to virulent swine-plague bacteria and *vice versa*.

---

* Smith and Moore, Bulletin No. 6, Bureau of Animal Industry, 1894, p. 89.

If time permitted it would be interesting to analyse the arguments which have been advanced to prove the identity of these affections. It would be equally instructive to discuss the various experiences in reference to certain properties of these bacteria, such for example, as the formation of indol, their reaction to the Widal serum test, and their toxins and antitoxins. These, however, are still in the experimental stage. It should be stated, that while it may be possible, under certain restricted conditions, to point out more similarities than differences, I have failed in my task if I have not shown that from first to last these diseases are different. When their investigation is extended by any of the methods of modern bacteriological or pathological research we are impressed with their striking dissimilarities, rather than with their exceptional resemblances. Thus, in the study of their morbid anatomy, the morphology and biochemic properties of their specific organisms, or in the mysterious problems of artificial immunity and resistance, they differ the one from the other. Finally, as I understand them, the diseases known in America as hog cholera and swine plague are separate and independent affectious, and each should have an unchallenged place in the annals of comparative medicine and pathology.

CEREBRO-SPINAL MENINGITIS.

By W. J. Martin, V. S., Kankakee, Ill.

On September 16 of last year, I was requested by Mr. J. G. to go to his barn about 20 miles west of this city to examine a sick mare, he stating that he had recently lost two young horses from the same sickness the mare now had, the nature of which was totally unknown to him. Upon my arrival at the barn, I found a bay mare, aged seven years, suffering from chronic cerebral disease, it being nearly seven weeks since the mare was first noticed to be "off her feed." She died a few days later. It is not this particular case which I wish to call to the attention of the members of the profession, but the common prevalence of this form of cerebral disease in certain sections of

Illinois at various seasons of the year and which causes the death of many horses.

The disease is most commonly seen in districts in which the land used for meadow and pasture purposes is low and marshy and undrained. Mr. J. G.'s barn is situated in a narrow strip of country known as the " Barrens " and for several years past I have met with many sporadic cases of the disease in that vicinity. The geological formation of the " Barrens " is a yellow sandy soil ; in places the sand is in ridges and heaps, varying in height from a few feet to more than 20. Interspersed between these ridges, are long, low stretches of marshy undrained land, on which grows a rank coarse wild grass. These bottom lands being unsuitable for cultivation are made to yield a very inferior quality of hay and are also used as pastures for stock. During the spring season the grass in those meadows is more or less covered with water and the detritus washed down by freshets from the surrounding ridges.

It is usually among horses fed exclusively on this kind of hay and grass that we find sporadic cases of cerebro-spinal meningitis, though at rare intervals cases will be met with among horses fed on the best of tame hay that has grown on fertile black soil that has been thoroughly drained.

From my observations there seem to be three distinct stages of the disease, viz., acute, subacute and chronic. These various stages are not by any means clearly defined, the disease in many of the cases having a tendency to become chronic from the outset for several weeks and all at once becoming acute, quickly destroying the animal. Again, the disease will from the first be of an acute form of the most fatal type ; the subacute stage cannot in the majority of the cases be differentiated from the chronic except in those cases in which a temporary improvement may take place for a short time.

Symptoms :—For several days the animal will appear slightly dull and languid in his actions, has a tucked-up appearance in the flanks, does not perform his usual labor as formerly, lags behind his mate in harness and at times will refuse to eat. The schneiderian membrane is usually of a dry, dirty, ash-gray color, though in some cases it may be of a bright pink color. The pulse is slow and irregular, having a tendency to roll under the finger and to at times miss or drop a beat. The eyes are dull, the conjunctiva is engorged with blood ; vision is much impaired and in the acute cases the animal may be quite blind. The appetite as noted above is capricious in the early stage ; at times the animal will not touch food and at other times it will eat the most common refuse of the manure heap or even its own excrement with evident relish. Thirst in the majority of cases is very moderate, some animals going for several days without touching water. It is only in the acute cases that run a rapidly fatal course that I have observed paralysis of the muscles of deglutition. When made to walk the gait is staggering, the hind limbs will be dragged along in the most listless manner ; if made to turn around quickly, the animal will reel and nearly fall to the ground—loss of co-ordination. The lips of the vulva in the female are of a pale anæmic color ; the sphincter vesicæ is relaxed, permitting the urine to dribble away involuntarily. In the male the penis hangs pendulous and flaccid ; the same involuntary escape of urine may be seen in some cases, but not so often as in the mare. Respiration is abnormally slow, so much so that at times it is extremely difficult to count.

When standing undisturbed, the animal will fall into a semi-comatose sleep, sometimes with the head pressed tightly against the side of the barn or the stall partition. While in this condition the breathing is stertorous and the animal when aroused suddenly will appear startled, but soon relapses into sleep again. In most of the cases the bowels are obstinately constipated, amounting to complete or partial paralysis. The bodily temperature in the majority of cases is normal, though in the acute cases it often ranges as high as 106° to 107°. It may also be abnormally low in some of the chronic cases as 96 to 98¾. The urine in the acute cases is of a clear watery color ; and is usually abundant in quantity. In the chronic cases the urine is usually scanty in amount, strong smelling and of a deep yellow color. The fæces are small and very hard. Sordes may be seen on the teeth, the gums are more or less excoriated, the lips swollen from the animal pushing its head against obstructions. The tongue is dry and covered with a whitish gray coat, its dorsal surface is covered at right angles by rugose folds and furrows. The breath in the majority of cases is extremely fœtid, and the animal will grind its teeth in a peculiar manner. Nervous twitching of the lips, the caput muscles and patellar group, is often seen. In eating the animal will often go to sleep with its mouth partly filled with unmasticated hay or grass. In acute cases, tetanic spasms of the muscles of the lumbar and cervical region may be seen, although this condition is rare in my experience.

No season of the year is entirely free from the disease, though it is most common in the early autumn or winter months. At times the disease will appear in certain districts in such a severe form as to amount almost to an epidemic. At other times the disease will confine its ravages to one particular ranch or farm. During the past early autumn such an outbreak occurred on a ranch about 20 miles southeast of this city. Dr. J. L. Tyler, of Chebanse, Ills., who, as Assistant State Veterinarian, investigated this outbreak of the disease, has furnished me with such a full and interesting account of his experience that I give his letter in full:

CHEBANSE, ILL., Feb. 5, 1898.

Dr. W. J. Martin:

DEAR DOCTOR:—I will endeavor to answer some of the questions you have propounded: Membranes of the eyes and nose congested, bodily temperature elevated. Out of 30 head that appeared to be affected I picked 8 head from mild to bad cases with temperature in order of severity as follows: 101, 102, 102, 103, 103½, 104, 105, 107. Pulse rather below normal. Respirations in some cases were exaggerated, in others about normal. No post-mortems were held, as none were dead, and the owner would not sacrifice any on the altar of science. Some would die in about two days and one had lived as long as eleven days. When the animals first were affected they died quicker, but when I saw the herd the more acute cases had died to the number of 11 head; the balance affected had more of a sub-acute attack, as the disease seemed to be losing its virulence, especially as the owner had taken the herd to another pasture about ten days before I came.

As to the cause of the disease, it was this: These horses run in a pasture of about 150 acres, partly upland and some timber and about half bottom land along Beaver

Creek, which runs through the field. In the spring and early summer this land is overflowed. The stock feed on the uplands until along in July, when the grasses dry out, and then they go below to feed, where the grass is green. They soon begin to show symptoms of the disease.

I think the germ of the disease is developed on the grass in the form of a parasitic fungus, due to fermentative changes which were produced by the long-continued moisture, followed by the extreme heat, the two great factors in any fermentative change being heat and moisture. There were about 110 head; 11 died, and when I was there they had 30 head that were visibly affected—dull, listless in appearance, staggering gait, difficult mastication and deglutition, fever, pulse rate low, some were very stupid. The acute cases that died before I came would appear thus, then go down and delirium become extreme, and die without getting up again. The sub-acute cases were up and down, the extreme delirium not well marked, as they usually died quite quietly. In some of the cases the eyes were quite staring, and the eye was not affected when the ball was touched by the finger, reflexes being lost. The muscles of the tail had lost their tone, the tail being limp on manipulation. I put the animals on the enclosed prescription for the eight head in the barn, which were the worst; separated all the sick ones, and put them in a good meadow, where the hay had been cut off; the others, which appeared well, I put in another upland pasture.

℞	Tr. ferri chlo.,	1 lb.
	Fl. ex. nux,	½ lb.
	Fl. ex. zinziber.,	½ lb.
	Quinine,	½ lb.
	Whisky,	1½ C.

Mix. Sig. Three ounces three times a day.

The man agreed to write me the results, but I never heard from him, so know nothing of the results. Hoping this may be of some benefit to you I am, yours as ever,

J. L. TYLER.

As the disease advances the animal will become more and more comatose; standing with all four limbs wide apart, and being moved up and down automatically as if walking. The delirium will recur at short intervals; the animal will at times place the point of the sternum against the manger and in this position will push forward with all the strength of the body. More often the head will be placed against the barn wall and in this position the animal will push and batter its head until it is a sight to behold. The delirium may last for several days before death puts an end to the poor brute's sufferings. Animals affected with the disease will usually live from 10 to 30 days, and in some of the milder cases they may linger on for several months. It is rare, even for the very worst cases, to die before the tenth day.

Etiology:—Notwithstanding the great advance made during the last few years by both human and veterinary medicine, the origin or cause of this destructive disease is still wrapped in profound obscurity. In human medicine it is still called a miasmatic contagious malady, and, if I am correctly informed, the specific microbe which causes it has not yet been discovered. In the horse, Dr. E. C. Schroeder, in 1892, investigated for the Bureau of Animal Industry an outbreak among horses in South Dakota called "Bottom Disease," which, from the symptoms given, I believe to have been sporadic cerebro-spinal meningitis. Dr. Schroeder held several post-mortem examinations, and forwarded to the Bureau for microscopical examination parts of the liver and spleen. Aside from some interesting pathological changes of a cirrhotic nature in the structure of the liver, the examination revealed nothing. That cerebro-spinal meningitis is to be viewed as an interstitial inflammation of the brain and spinal cord, together with their meningeal coverings, due to the ingestion into the system of certain low forms of either animal or vegetable life, such as protozoa or fungi, taken into the system by the food, drinking water or the breathing of miasmatic night air, seems to be the general opinion among veterinarians who have clinically investigated the disease.

If due to a fungus this is no doubt accumulated upon hay or grass during the wet season, and, being eaten, the fermentation of digestion there is carried into the blood-stream the toxin or ptomaine thus generated. This toxin produces great chemical changes, both upon the blood and great nerve centres of the body.

It is well known that low miscropic forms of fungi and protozoa are the exciting cause of many diseases in men and animals. The so-called "Leeches" or Bursattee sores seen on horses in this country and India are due to the presence in the blood of protozoa. Late researches into the cause of malarial fevers in man have shown that the primary cause of this disease is the presence in the blood of minute protozoa, the *Plasmodium Sanguinis*.

Malarial:—The manner in which this germ gains entrance into the circulatory system of man is as yet unknown, but that it is through the food or drinking water or the breathing of miasmatic night air, seems to be the general opinion among medical men.

Treatment :—So long as the true nature of the disease is unknown, our treatment of it must be purely empirical. No method of treatment has proved successful with me in the majority of cases, though nearly all forms of medication have been employed. Purgatives, such as aloes, raw linseed oil in combination with oleum terebinth and oleum tiglii in heroic doses, seem not to have the slightest effect in moving the contents of the paralyzed bowels. Enemas of warm water containing a strong solution of chloride of sodium have given the best results for this purpose. Nerve tonics, such as strychnia subcutaneously or per orem, do not seem to have the slightest beneficial effect. It is simply astonishing the amount of strychnine, arsenic and other potent drugs a horse can take with almost perfect immunity when suffering from this disease. Some cases at first respond in a remarkably favorable manner to large doses of the fluid extract of gelsemium, but after taking it for a few days this drug also seems to lose all physiological action on the animal.

Spontaneous Recovery :—Occasionally an animal will recover from a severe attack of the disease without any medicinal treatment whatever. The animal may afterwards eat well, and will even become quite healthy ; the mind will become clear, and to all appearances the animal will be restored to perfect health, with the exception of loss of motor power in the hind extremities, which renders the animal useless for any kind of hard labor. This loss of motor power is a sequelæ of the intense inflammation of the spinal cord and the effusion of serum between the spinal membranes.

Post-mortem Appearances :—On removing the skin, large areas of the subdermal tissue are occupied by masses of coagulated serum of a yellowish color. The blood vessels contain blood of a thin, dark color that is non-coagulable. Numerous red or bloody spots are seen on the external coat of the dura mater of the brain and spinal cord. Considerable effusion of serum is found in the arachnoid space. In chronic cases this serum is usually of a red color; in acute cases, it is often of a yellowish color and contains broken-down inflammatory débris, clots of fibrin, red blood corpuscles, etc. The pia mater shows evidence of intense inflammation and is often found closely adherent to the spinal cord by plastic exudation. The blood vessels surrounding the brain and spinal cord are congested and contain dark-colored blood. The spinal cord is of a soft, semi-gelatinous consistency and is usually of a dark red color.

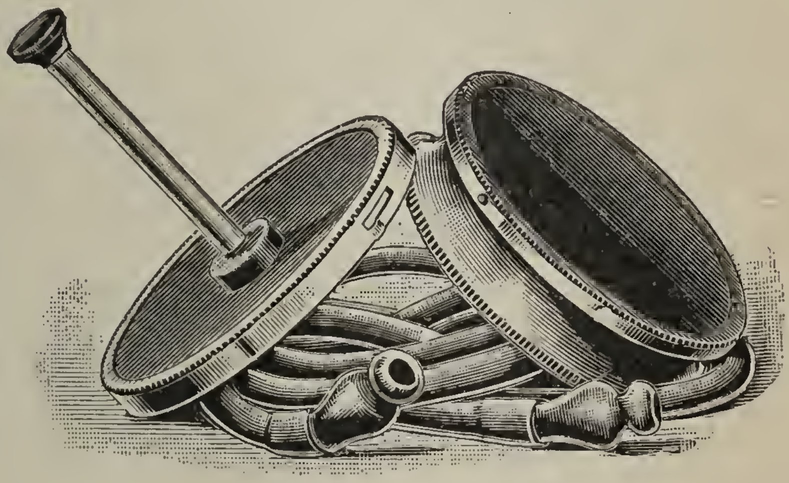
The stomach usually contains a small amount of food, dry and slightly impacted. The lungs are œdematous in the chronic form, and hypostatic congestion is present. In the acute form lobular pneumonia of an intense type is found in the anterior lobes of the lungs. Serum in considerable amounts is often found in the chronic cases, while in the acute or sub-acute ones it may be entirely absent. The intestines are covered in patches by areas of congested spots of a dark color; these congested areas are also found in the serous covering of the intestines. The colon is often impacted with dry food. In some cases the intestines will contain large numbers of parasites, such as S. Armatus, S. Tetracanthus, and Acaris Megalocephala. In some cases reported to me, large numbers of G. Equi and quantities of sand are said to have been found in the stomach and intestines. Of the former, I have seen a few present in many cases, though not in sufficient numbers to cause any harm. The latter condition I have never met with.

The liver is enlarged and much engorged with dark colored blood. The muscular tissue showing most markedly by its yellow color and the patches of yellow serum under the skin that this organ has been the seat of severe structural change. In the chronic cases, cirrhosis is a common condition of this gland. The spleen is enlarged, much engorged with blood of a dark color, and the structural substance of the organ is quite soft. The emaciation of the body both in acute and chronic cases is very marked, marasmus.

THE PHONENDOSCOPE IN MEDICAL AND VETERINARY PRACTICE.

By Prof. A. Vachetti, of the University of Pisa.

Several medical and veterinary journals, foreign as well as Italian, have spoken of this new means of diagnostic examinations which has been invented by Italians, Professors Aurelio Bianchi and Eugenio Banzi, of Florence. As yet the apparatus is little known by us, though it well deserves to become more popular in general practice as well as in the medical schools on account of the remarkable service it renders.



It is a metallic tambour (C), covered on one side with a very thin vibrating sheet of ebony which renders the instrument very sensitive to all sounds. Inside of the drum is a little vibrator. On the opposite of it are two apertures, into which two little metallic tubes are fitted. To these are attached rubber tubes, at the extremities of which are perforated, olive-shaped buttons of wood.

After the instrument is placed on the part to be examined, either upon the skin or over the clothing, the examiner taking care not to produce friction while applying the phonendoscope, he inserts the two olive-shaped buttons into his ears, in such a way that they penetrate well into the external auditory canals, and that the perforations of the olives have the same direction as the canals. Then he will perceive very distinct, by the much increased normal and pathological sounds of the heart, the lungs, the nostrils, the larynx, the trachea, the pleura, the pericardium, the veins and arteries, the cranium, the stomach, the intestines, the peritoneum, the articulations, the tendons and other sounds, according to the parts under examination.

To diminish the excessive intensity of the sounds, one places on top of the phonendoscope the circular disk B, which is also covered with a sheet of ebony. In order to examine a very limited point, for instance, a cardiac orifice, a limited part of the lungs, or in case of fractures, in order to make an auscultatory percussion or to define exactly the area of an intestine, one only has to screw the little metallic rod (A) to the centre of the disk B and press the ebony button on the part to be examined.

The disk which receives the waves of sound can be applied simply with its sheet of ebony to the surface where the auscultation is to be made, if the surface is horizontal; but it is always better to press the surfaces well against each other with one hand, which is indispensable when the parts under examination are not horizontal. One hand of the examiner is free and the length of the elastic tubes permits him to remain at a certain distance from the auscultatory surface and from the patient, which is convenient and pleasant for both.

Or, one can let an assistant compress the disk and the practitioner has both hands free for any emergency, and especially to make auscultatory percussion. One must always avoid the friction of the instrument and of the tubes against each other; otherwise the noise caused by it would disturb the auscultation.

I have repeatedly asserted that the best way to hear short sounds and murmurs, for instance, those of the heart, is with both ears. For prolonged murmurs and sounds, such as the breathing, the respiratory murmur and others, it is better with one ear only. But the phonendoscope renders it very easy to examine with one or both ears, according to what is most indicated.

The apparatus of the Professors Banzi and Bianchi, which I have applied several times to persons and animals, is very valuable for schools as well as in the practice, because it permits two persons a simultaneous auscultation on the same point, each of them using one auscultatory tube, and therefore it is of greatest advantage in semiotic lessons and in consultations.

As it increases the sounds, it is a real resource for hard-hearing people; therefore we can also consider it an excellent acoustic ear-trumpet.

It gives splendid results in the diagnosis of pregnancy, as it transfers to the listener's ear the fœtal heart sounds as well as the so-called "placental bruit" inside of the woman.

But where I found the phonendoscope by far superior to all other instruments of auscultation, is in the auto-auscultation. I will not argue whether it is advisable for the patient to auscultate his own heart or lungs a. s. f.; I also admit that every physician and every veterinarian is a bad patient, and will become worse when having the means of examining himself with little inconvenience, while lying on his sick-bed. In a very short time he will become a hypochondriac. But in everybody's mind and heart is the desire to "know yourself," and everybody, little as he may be fit for it, likes to control his own diagnosis and the assertions of the treating physician. For such cases the phonendoscope is of great value.

Besides several colleges there are numerous physicians with whom I have used this instrument who desired to purchase one for their individual account, and I have directed them to* "Casa Successori Martin Wallach, Roma, Corsa 262, Palazzo Odescalchi," who have acquired the sole rights of these instruments.

REPORTS OF CASES.

"*Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science.*"

GENERAL FATTY DEGENERATION OF THE MUSCULAR SYSTEM.

By E. L. VOLGENAU, D. V. S., Buffalo, N. Y.

Many interesting and instructive conditions are encountered in the port-mortem work carried on under the direction of the U. S. Bureau of Animal Industry. A native steer, grade Durham, two years old, affected with fatty degeneration of the entire muscular system, recently came under our observation. This interesting pathological condition was not confined to one group of muscles, but every muscle of the body seemed to be affected. Our attention was first called to the animal by its peculiar gait, manifested by dragging the hind extremities, as though they were paralyzed. The entire act of locomotion seemed to be attended with considerable difficulty. Suspecting something wrong, the animal was tagged with a metalic tag, for the purpose of identification, post-mortem. The post-mortem examination as far as the visceræ were concerned was negative. All the organs were seemingly healthy. There was no more fat deposited upon the visceræ than in the average fat native steer slaughtered at this establishment. It was not until the carcass was quartered that the peculiar fatty condition of the muscular structures was observed. What is termed by butchers the "rib roasts" (muscles of the dorsal region) were found to be composed of a brittle fat, of the consistency of suet. In portions, notably between the eighth and tenth ribs, traces of muscular tissue were discoverable; but even here there was so much infiltrated fat that the muscles appeared pale and waxy.

---

* The American representatives of Martin Wallach, Roma, are George P. Pilling and Son, Philadelphia.

Most marked were the lesions in the hind-quarters. The gluteal muscles, notably in the anterior, external and internal regions, were simply clumps of fat, with not even a trace of muscular tissue discernable to the naked eye. Slices were prepared and placed under the microscope, and gave the characteristic appearance of fatty degeneration.

Upon a rapid examination of veterinary books at our disposal, we have failed to find an account or report of a like case as that briefly described above. The disease which "human physicians" term "Pseudo-hypertrophic Muscular Paralysis" seems to be the same pathological condition.

LYMPHANGITIS AND HYPERTROPHIED HOOF FROM CALKING.

By W. L. WEST, V. S., Belfast, Maine.

The REVIEW arrives with unfailing regularity and its advent and perusal form one of the bright spots in my life. I wish to thank you for the many good things you have given us in the past year, and know they will be continued in 1898.

I had a somewhat unusual case not long since and will give you a brief account of it.

Subject, a bay gelding of gross, plethoric, lymphatic temperament. I was called to treat him for furuncles of the superior cervical region, occasioned partially by a bad fitting and dirty harness and partly from an irritable and badly nourished skin. I advised rest; gave a liberal purge, poulticed, and later incised the boils, instructed the owner to feed no grain and give liquor arsenicalis, ℥ss, ter in die. I saw the case every day for four or five days, and it was quite a surprise to me one morning to find my patient with a case of acute lymphangitis of the left hind leg. Some careful inquiries elicited the information that the owner from the kindness of his heart had disobeyed my instructions and had been giving the horse twelve quarts of corn meal per day (to keep his strength up). I felt somewhat chagrined at not receiving better treatment from the owner, but said nothing and abstracted three quarts of blood from the jugular, administered a capsule containing aloes pulv., ʒ vi; calomel, gr xx, and told them not to allow any exercise, and I would see the case next morning; but, alas, an officious friend got in his work and advised the owner that all that ailed the horse was "a sprain," and he had better give him plenty of exercise and he would work out of it.

When I called next day to see the horse the owner's wife gave me the above facts in a somewhat shamefaced way, and, like Othello, I found my occupation gone.

Sequel.—After about three months I was making my rounds of the milk farms on an inspecting tour, and in a vacant field saw my whilom patient. The proprietor of the farm said he had been given to him and wanted to know if I could do anything for him. I made a careful examination and found some thickening as a result of previous lymphangitis, but the animal was very lame in the opposite foot (right one). Upon looking at the foot the sole was found to protrude enough to make the convexity touch the ground before the walls. I advised destroying the horse, and told the owner to bring me the leg and foot (right one), which he did, and I made a median longitudinal section as near through the centre of the os pedis as possible, and found that bone, instead of being in an oblique direction, nearly perpendicular, caused by a growth of horn backward from the inner face of the front wall about the upper third, with an area of hypertrophied coronary substance immediately above it, showing much cicatricial tissue and evidence of many punctures by the heel calk of the opposite foot. I have since learned that the horse had a confirmed habit of standing with the left heel resting on the right coronet.

SANMETTO IN CANINE CYSTITIS.

By G. L. Barnaby, V.S., Mason, Mich.

I am more thoroughly convinced each day of my life that it is impossible for a man to keep fully abreast with the great advancements made in veterinary medicine and surgery. Old fads and foolish superstitions have steadily given way for a new and intelligent order of things, and he who fails to at least attempt to keep posted is soon justly relegated to a place among choice specimens of antiquity. Investigators into the causes of pathological lesions have made gigantic strides, and means for prevention or cure have been discovered, till many of the diseases heretofore deemed grave, if not absolutely fatal, are not only relieved, but cured, by some of the newly discovered remedies. Foremost in the ranks of investigators is he who has given to the medical and veterinary practice that great genito-urinary remedy, Sanmetto. But a few months ago it was brought to my notice, and in every case where I have used it the results have been most gratifying.

Especially do I find it so in cases of cystitis in dogs. In no case have I tried it, or known of its being tried, without accomplishing a perfect cure, and that, too, in a very incredibly short period of time. Suppurative pyelitis and hæmaturia give way before its exhibition quicker and surer than by any other course known to our practice. The urine clears up after a few doses —a proper amount is secreted and at proper intervals. The soreness and tenderness disappear as if by magic, and the animal soon regains natural vigor under its tonic effects. Azoturia in horses yields just as readily—less than two ounces usually neutralizes the hypuric acid of the urine, and smaller doses following allay the irritation along the urinary tract and assist in the process of elimination of the poisonous materials of the system. Genito-urinary troubles in the brute creation have lost much of their terrors since the Od Chem. Co. has given to the profession their Sanmetto.

Encouraged by its action in the brute creation, I began asking myself why it would not relieve the aches and pains that had become chronic in my own case, and, emboldened by the experience of medical practitioners, I began its use upon myself, and the result is I am to-day a well man. I wish the value of Sanmetto could be more generally known to our profession, for in it I feel sure I recognize one of the greatest boons to our profession as well as to humanity at large. If this shall lighten the burdens of my brother practitioners, and they should recognize, like myself, that the difficulties standing in the way of a cure in many of those obstinate genito-urinary troubles are removed by the use of Sanmetto, the object of this paper will be gained.

REMOVAL OF THE PREMAXILLA.

By J. A. McCrank, D.V.S., Plattsburg, N. Y.

On December 9th I was called to S. F., to see a horse owned by Mr. L. The animal had been working on a threshing machine, when his mate crowded him over the side onto the floor. The tying was so firm and so long as to permit his upper incisors to come in contact with the arms of the flywheel, which struck him each time it passed around. I found the bone fractured in many places, so that I concluded it was impossible to save the jaw. I decided to remove the pieces and save channels of nutrition. The palato-labial artery was not injured, though I was obliged to saw the bone through the foramen to relieve the blood vessel. The canine teeth and incisors were removed with the parts of the bone in a line with the canines. The wound was freely washed with antiseptic solution. The head was tied up so that he could reach no food, being allowed soft mashes for ten days, once per day, after which the wound was thoroughly cleansed. On the fifth day, accidentally, on purpose, the horse got some hay, and he handled it so well that the owner decided to let him have all he would eat. He was at work in eight days, and has been doing well ever since.

This case is reported because I have never met with such a report in the journals; consequently it is for the benefit of the younger members of the profession or those who are inexperienced. The older brothers may look on it as a simple case, but I tell you the natives of S. F. think I am —— and quite a surgeon. Possibly there are none of our veterinarians so young as I am that may not need this report, but all will know that I learned so much from practice.

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By W. V. Bieser, D. V. S., New York City.

Treatment of Chronic Obstipation with Beech-Wood Creosote.—Von H. announces that beech-wood creosote in doses of a few drops after meals in a glass of water has remarkable influence in chronic obstipation in human practice. He recommends that gradually increasing doses from 1 to 8 drops, t. i. d., be given. He attributes his success with the remedy to the antiseptic qualities of the remedy, which inhibit the formation of the toxins which paralyze the muscular coat of the bowel, thus preventing the habitual obstipation. Hence the author recommends this treatment highly in dog practice.—(*Berl. Thierärzt. Woch.*)

A NEW TREATMENT FOR CHRONIC LAMENESS OF THE SHOULDER.—Tempel, of Leipzig, in issue No. 31 of the *Deutsche Thierärztliche Wochenschrift* for the year 1897, recommends a very simple treatment for chronic rheumatism of the shoulder, viz., one injection subcutaneously into the region of the shoulder of the following: Morph. hydrochlorate, 0.2; atropia sulphate, 0.05; aquæ dest., 20.00, for horses of medium weight. After the fourth day following the injection the lameness, provided the diagnosis of its cause is correct, is said to promptly and permanently disappear. Such a result he obtained in ten horses thus injected. The author in order to test this treatment gave the above injection according to directions in the case of a four-year-old horse suffering from chronic rheumatism of the shoulder with remarkable success, the lameness disappearing permanently after the fourth day. The history of the case was as follows: Off and on, even if not continuously, for a year the horse after severe exertion went lame on the off fore leg. Careful examination elicited shoulder lameness, with marked atrophy of the muscles in that region; otherwise local examination elicited nothing positive. Hence the diagnosis of chronic rheumatism of the shoulder was rendered fairly certain. It disappeared under the above treatment. It would be a great boon to the veterinary profession were such an obstinate affection as the above to give way to such a highly simple procedure. The treatment ought most certainly to be brought into vogue more extensively.—(*Berl. Thierärzt. Woch.*)

OLEUM CANNABIS AS A GALACTIFUGE.—The author says that the veterinarian is often compelled to check the secretion of milk; for example, in bitches whose offspring have either been taken away or have died; in mares that refuse to suckle their young, etc. Up to this time no efficient remedy has been promulgated that will accomplish the purpose above desired. He has used the oil of "cannabis sativa," used also for this purpose in human practice, with success. In horses the oil was given once daily in the shape of warm inunction, the udders having been freely milked beforehand in case of marked congestion of the same. The quantity diminished after the first inunction and in three to five days the milk usually disappears entirely, and at the very latest after eight days, no matter whether the inunction was discontinued after the third or after the fourth day. The skin of the udder is not appreciably changed by the inunction, the scaling off of the epithelium being attributed to the energetic rubbing. At any rate, without any other medication and without any alteration in the diet, the galactifuge properties of the remedy were established. In dogs, to prevent their licking off the oil, a cotton compress was applied over the udder. Here also, as in horses, after preliminary emptying of the udder, whether the inunction was stopped on the third or on the fourth day the milk secretion stopped usually on the fourth or fifth day. Only in one case did the milk secretion continue until the seventh day. The skin was unaffected by the remedy. Changes in diet or administration of other remedies were here also not called into play to establish the galactifuge properties of the remedy.—(*Berl. Thierärzt. Woch.*)

THE VALUE OF HYDRASTIS CANADENSIS IN BRONCHIAL CATARRH.—After six years of active trial of the remedy the author discovered: 1st, a marked diminution of the paroxsyms of coughing; 2d, an appreciable easement in the expectoration; 3d, an influence upon the secretion of the bronchial mucous membrane in such a way that from being purulent in character, the secretion became nearly if not altogether mucoid in character; 4th, a marked decrease in the physical signs attendant upon a bronchial catarrh. The author places the anticatarrhal qualities of hydrastis far above those of the other bronchial remedies and its sedative effect so marked that he entirely disregards the use of opium and its alkaloids in the treatment of consumption in favor of this remedy. He gives 20 to 30 drops of the fluid extract in sugared water four times a day to adults; its alkaloid hydrastin is not so reliable. — (*Berl. Thierärzt. Woch.*)

FRENCH REVIEW.

VOLVULUS IN A HORSE—POST-MORTEM RUPTURE OF THE STOMACH [*By Mr. C. Lesbre*].—A twelve-year-old gelding was taken ill and died in a little over 24 hours. He had acute, continuous colics, which increased rapidly in severity. The pulse became weaker by degrees, his countenance contracted, the glare staring. He ground his teeth. The skin and extremities were cold, and here and there covered with perspiration; the conjunctivæ cyanotic. Under the influence of eserine, pilocarpine and rectal injections, a few gaseous evacuations took place; there was loud and repeated borborygmus. The horse laid down frequently and assumed the dorsal position, in which he seemed to have some relief. A few hours before death, the symptoms seemed to subside, but it was only the precursor of death, which took place soon. At the post-mortem, besides the lesions of volvulus, there was found a rupture of the stomach on its anterior face, which presented the characters of a lesion which had taken place after death.—(*Journ. de Zootechnie*, *Sept. '97.*)

CARDIAL DILATATION WITH INSUFFICIENCY OF THE ORIFICES—RUPTURE OF THE POSTERIOR VENA CAVA.—In the October number of the *Journal of Zootechnie*, of Lyon, Prof. Cadeac reports minutely an interesting complicated case of heart hypertrophy, in which the organ weighed 6 kilogrammes (12 pounds), and, while it had doubled in weight, it had trebled in size and in capacity. The auriculo-ventricular, the arterial openings of the base of the ventricular mass, and that of the vena cava, were considerably enlarged, and, though they presented no marks of inflammation nor any growth, they were insufficient and the closed wrist could be introduced through them. The diameter of the ventricles was in proportion to that of the openings and the auricles presented also similar alterations. The arterial system and the venous network of the posterior part of the body were entirely empty; but in the anterior part, the venous system was largely developed and in appearance doubled in size. The kidneys and liver, enormously large, were gorged with blood. At the point of entrance of the posterior vena cava over the anterior face of the liver there was a laceration involving both the vein and the hepatic substance. The animal, aged nine years, was in good condition, used for comparatively light work, and had presented for some time evident symptoms of cardiac affection, such as difficult respiration on the slightest exertion, acceleration in the beatings of the heart, jugular pulse, characteristic bruits at auscultation, threatening asystolic phenomena, œdematous swellings of the extremities and dependent parts of the body, loss of appetite, of flesh and marked signs of hydrothorax and ascites.

THE INFLUENCE OF THE NATURE OF FOREIGN BODY IN THE INTESTINAL OBSTRUCTION OF DOGS [*By Mr. A. Morey*].—An eight-months old Danish pup has the bad habit of picking up and swallowing every piece of cord that he meets. One day he refuses his food, is constipated, and vomits frequently. He is in bad condition, the mucous membranes are pale and somewhat yellowish, the abdomen is tympanitic; there is much prostration. By abdominal palpation, a mass is felt, slightly depressible, about 10 centimetres (5 inches) long, upon which pressure is painful. Surgical interference is decided upon, and laparotomy performed. With difficulty, after incision of the intestines, the greatest part of a piece of cord, knotted in several places, is extracted by careful tractions. But for fear of too much laceration a very small piece is left in the intestines. The wounds were treated antiseptically. The dog did well for two days, but ultimately died. Two ulcerations were found in the intestines back of the part which had been incised for the operation, and which were due to the peristaltic contractions of the organ, which, by rubbing against the remaining piece of cord, had been cut through. The wound of the intestines at the seat of operation was firmly closed. The piece of cord extracted when unrolled measured 6 metres (about 6 yards) in length.—(*Journ. of Zoot.*, *Oct.*, '*97*.)

HYPERTROPHY OF THE PROSTATE AND PERINEAL HERNIA OF THE BLADDER IN A DOG.—A twelve-year-old fox terrier, writes Mr. Caronyiau, was brought to me in great pain; its back was arched, its abdomen contracted, and it made useless efforts to micturate. Between both ischii there was a round swelling extending from the perineum to the base of the tail. This swelling was as big as the fist; it pushed the anus upwards and to the left; it was somewhat soft, not very painful, and fluctuated. Rectal exploration revealed a firm, hard mass, situated at the anterior part of the pelvis and behind it a tense pouch, full of liquid. The mass was the hypertrophied prostate, the pouch was the bladder. A catheter introduced in the urethra could not enter the bladder. Puncture of the external tumor gave escape to normal urine. This gave temporary relief. The dog was destroyed the next day. At the post-mortem the prostate was found largely hypertrophied and the body of the bladder was turned backwards, and its neck acting as a hinge, the anterior extremity of the organ had become posterior and was in contact with the skin of the perineum.—(*Journ. of Zootech*, *Oct.*, '*97*.)

ABNORMAL RETENTION OF THE FŒTUS IN A COW [*By Mr. P. Leblanc*].—The owner of the cow is sure that his animal is in calf, but lately he cannot find it by manipulation. He fears that he has made an error, as the cow continues to give a quantity of milk superior to what she ought to, if parturition was close at hand. The author by physical signs cannot detect the presence of the calf, but by rectal examination finds on the left side a hard, globular mass, which is easily defined, is of the size of a man's head and is adherent to another tumor as big as the fist, possibly the head of the expected fœtus, which is evidently dead. The owner was then informed that this state of affairs might last for a long time or that the cow might at an unknown time deliver. Four months after the cow was taken with pains and the owner extracted, from her vagina, a mass of bony consistency, weighing between fourteen and sixteen pounds. It was the fœtus which had remained in the uterus exactly 390 days.—(*Jour. of Zoötech., Oct., '97.*)

PURULENT INFECTION FOLLOWING CHRONIC ENDOMETRITIS [*By Mr. Jacolin*].—This case is reported with the object of showing that in practice a practitioner is not justifiable in overlooking the possibilities of a purulent chronic metritis, even if it had existed for some time and to all appearances compatible with perfect health. The subject was a mare, 13 years old, which at different times had had a discharge from the vulva, which was considered as harmless and did not interfere with her work, until at last she was again attacked, when the flow was more abundant, soiling the hind quarters of the animal. She was treated and relieved by antiseptic vaginal douches. All went well for some five months, during which the mare did good work, when one day she became very lame on the left hind leg, which was diagnosticated as of acute rheumatoid nature. But the trouble increased: general condition assuming severe pains and high fever, swelling of the hock, warm, œdematous and painful, which soon increased and spread upwards and downwards. Later on, the right hind leg became affected in the same manner to such an extent that standing, which had been very painful and uneasy, became impossible, and the mare had to remain lying most of the time. An abscess had formed in the fetlock, which ulcerated and contained a semi-consistant fluid, yellow-reddish, bloody, and then dark red wine color. This series of symptoms kept on increasing until after four days of great suffering the animal died suddenly. At the post-mortem all the lesions of septic poisoning were found, with infiltration of the muscular structure of the extremities, lesions of the kidneys, the liver, the lungs, etc. Besides all those there was a cancerous growth, as big as a child's head and weighing in the neighborhood of five pounds, of encephaloid sarcomatous nature and of old standing, which was situated in front and a little to the left of the right kidney.—(*Rec. Med. Vet., Dec., '97.*)

INFECTIOUS PARAPLEGIA [*By Mr. L. Mulotte*].—Under this title the author reports an outbreak of what we think would be called spinal meningitis in the United States, in which five horses out of a stable of sixteen animals had died with symptoms and a history which are very similar to those which are observed in cases of spinal meningitis.—(*Rec. Med. Vet., Dec., '97.*)

TEMPORARY DEAFNESS IN THE HORSE [*By Mr. F. Dumand*].—The driver of a horse harnessed to a cart had the habit, when driving and when the occasion presented to shoot birds flying within his reach. One day he met with a flock of partridges and shot at them. The horse showed no manifestations of surprise, but, when stopped, failed to answer to the calls of the driver to resume his work. When the author saw him he was entirely indifferent to whatever took place round him, his ears were drooping and immobile, was indifferent to the voice of his master; he was entirely deaf. This infirmity, however, was only temporary, it subsided and disappeared by itself without any treatment. It is said that the driver was also cured of his peculiar mode of going hunting.—(*Rec. Med. Vet., Dec., 97.*)

ENGLISH REVIEW.

NECK OF GLASS BOTTLE LODGED IN LARYNX.—The dangers connected with the use of glass bottles for the administration of medicines to large animals have been mentioned time and again, the cases recorded of accidents are very numerous, and still, notwithstanding the progress made in veterinary pharmacology, the glass bottle has still its advocates. An interesting fatal case is recorded in the *Veterinary Record* in which a horse, being administered a drench, crushed the bottle and part of it, the neck and the shoulder, passed beyond the mouth. Where? Post-mortem only revealed. Examinations of the mouth, pressure on the throat, failed to locate them. But evidently the bottle was broken, portions of it were found which, gathered together, made it complete except the neck and shoulder, the symptoms indicating the presence of foreign bodies in the air passages. In a few words, the poor horse died after several days' suffering, and the missing piece of the bottle was found firmly imbedded in the larynx. The smooth rounded end of the neck had passed first and the sharp pointed surfaces of the broken part were buried in the membrane and muscles of the pharynx. The free border of the epiglottis was sawn into by the sharp border of the fractured glass. All the wounds of the larynx and the pharynx were of a gangrenous appearance.

OVARECTOMY IN A MONKEY.—Mr. Harold Leeney tells his experience in this operation on a pet animal. Bearing in mind the anatomical differences that existed in the genital organs of the little patient, and having no difficulty in bringing her under the influence of anæsthesia with a mixture of chloroform and ether (3 parts to one), the incision of the abdomen was made about a quarter of an inch to the left of the linea alba and the ovaries removed in the ordinary way. The next morning after the operation the animal seemed in perfect health and as if nothing had happened to her.—(*Vet. Rec.*)

MULTIPLE FRACTURE OF THE PELVIS.—It was a regular crushing of the right ossa innominata that Mr. Caudwell, F. R. C. V. S., found at the post-mortem of a hunter which had sustained a severe fall on a paved yard, which had occurred when the animal was suddenly started while resting after a morning walking exercise. The patient had evinced great suffering after the accident and evidently died from internal hæmorrhage. On removing the skin no surface lesions of any consequence were seen. When the abdomen was opened an immense quantity of blood escaped, partly consisting of large clots. The abdominal and thoracic organs were normal, but presented a bloodless appearance. The muscular coat of the bladder was much extravasated. On cutting down upon the pelvis and the hip joint all the bones of the right side were found to be fractured, the fractures extending through the acetabulum, which was broken into three portions. The necks of the ilium and ischium were fractured, also the transverse portions of the os pubis, and the ischium between its symphysis and the obturator foramen. There were additional fractures through the ischial spine, etc., subdividing the detached portions into thin pieces. The cartilage of the head of the femur was somewhat roughened and the muscles of the quarter and their intermuscular spaces were extensively extravasated with blood.—(*Vet. Rec.*)

GLANDERS IN ENGLAND.—From an interesting statistic presented by Mr. W. Hunting, F. R. C. V. S., in a paper read before one of the English veterinary societies it seems that for the last five years the disease has gradually diminished. While in 1892, 3001 animals were recorded as having been affected, the number gradually subsided—in 1893 to 2133—in 1894 to 1437—in 1895 to 1594—in 1896 to 1294. From these and from other facts concerned with the sanitary regulations attached to the management of the disease and the greater facility of diagnosis offered by the use of mallein, the author expressed the opinion that "there can be no doubt that glanders is a disease which might easily be stamped out of Great Britain."—(*Vet. Record.*)

FRACTURED RIB WITH PERFORATION OF THORAX IN A COW.—A cow having gone astray during the night, writes Mr. J. H. Parker, M. R. C. V. S., was found the next morning with a wound on her right side. Shortly after her arrival at home she gave birth to two healthy calves. When seen by Mr. P. she had a large triangular wound between the tenth and eleventh ribs, through which air was rushing in and out, synchronous with the respirations. The last three ribs were fractured and there was considerable flattening on that side. The wound was closed with a suture, a pad of flour and water on a piece of linen was placed over it and held in position by a bed sheet stitched as firmly as possible round the cow. This was removed a month later. The cow recovered entirely with a flattening of the side where the fracture existed.—(*Vet. Record.*)

ITALIAN REVIEW.

ABORTION IN A COW—SEVEN FŒTUSES [*By Dr. Ferdinardo*].—The subject was a good milking cow, seven years old, which for the previous four years had regularly given birth to one calf. About two hundred days pregnant, her abdomen is a little larger than in previous gestations, but not to any excess. On May 24th, she began to show signs of abortion by the escape of mucosities from the vulva and some abdominal pains. At eleven o'clock in the morning she dropped her first fœtus and some three hours later she had already thrown out three. She remained quiet for several hours, when the pains returned and were followed by the expulsion of four more fœtuses. The first fœtus was a male, the second a female, and it thus kept on until the end of the abortion, when four males and three females had been dropped. The average weight of the animals was between 7 and 8 kilogs. and each one was well formed. Notwithstanding a careful removal of the placentæ and antiseptic attention to the parts, putrefaction set in and the animal died.—(*Clinica Veterinaria.*)

STENOSIS OF THE PREPUCE RESULTING FROM ACROBYSTITIS AND SHORTNESS OF THE PENIS IN A HORSE.—Prof.

Lanzillotti-Buonsanti records this case from the clinics of the Milan Veterinary School. A roan gelding, of common breed, for the last month had a swollen sheath, gradually increasing, painless, warm and œdematous. The hand introduced with difficulty through the preputial opening meets with a fœtid magna and broken tissue. The penis cannot be reached. It is evident that the animal micturates in the cavity of its sheath and that the urine collects more or less into it. The diagnosis is evident. It is a case of acrobystitis with stenosis of the prepuce, due to the shortness of the penis. . The treatment consisted in an incision on the median line of the lower skin of the prepuce, with the removal, V shape, of a portion of skin on both sides, with suturing of the external and internal cutaneous folds on each side of the incision. This was made sufficiently long to reach the free extremity of the penis. The cicatrization of the edges of the wound demanded but little time to take place, and in some three weeks the animal was able to resume his work.—(*Clinica Veterinaria.*)

TRAUMA OF THE HEART IN A COW [*By Mr. Sismondo Ussal*].—This is not an unusual case, interesting principally by the extent of the lesions which were found at post-mortem. The symptoms presented by the animal having been those of similar injury, but having been overlooked or neglected, and the animal having died suddenly, the author was called to make the autopsy. The cause of death was a long sewing needle which had penetrated from the reticulum into the thorax, through the diaphragm and passing to the pericardium and the substance of the heart, had given rise to serious lesions and a fatal complication.—(*Clinica Veterinaria.*)

A QUEER TREATMENT FOR INDIGESTION IN CATTLE.—The *Giornale della Reale Societa Veterinaria* is responsible for this. It seems that in some parts of Italy, where empiricism flourishes, its partisans use frequently the following treatment, and it is said to be successful. When an animal is taken sick, it is made to swallow the whole skin and feathers of a black fowl. The feathers of the fowl must be thoroughly black and the comb of the animal well developed, free from scabs and of a rubilant red color. The best part of the treatment is that while the bovine struggles the best it can, the empiric eats the meat of the children, a big plate of salad, two pounds of bread and drinks a quart of good wine.

SULFURET OF CARBONE AND BOTS.—Mr. Ruyarti has given to two horses, in the space of six hours, six gelatine capsules containing each 15 grammes of sulfuret of carbone. The first horse during the four following days passed 497 bots and the second 571 in the five days following. Mr. Palermo gave one horse 32 grammes in five hours and he passed during the four following days 203 bots.—(*Giorn. della Reale Soc. Vet.*)

BELGIAN REVIEW.

CANINE PATHOLOGY [*By Mr. E. Lienaux*].—1. *Traumatic Neurosis Simulating General Chorea in a Dog.*—This clinical note refers to a four-year-old bull-dog, which had an abscess the size of a large nut on the left jugular groove. This was opened and antiseptic treatment prescribed. Two days later the patient had become exceedingly nervous, howling, trying to conceal himself under the furniture of the room where he was. On the fifth day all the signs of a general chorea were well manifested, and on account of its severity a doubtful prognosis was given of its recovery. A treatment with basis of bromides was prescribed, but could scarcely be applied on account of the aggravation of the symptoms when its administration had to take place. At any rate, after twelve days the wound had entirely cicatrized and a week later the convulsions had disappeared. The animal, however, remained always very shy. 2. *Softening and Tearing of Intervertebral Menisci with Consecutive Myelitis.*—The subject of this observation was a dog used for light draught, which of a sudden presented the following symptoms: Spontaneous painful moans, difficulty in walking due to the stiffness of the fore legs. If the animal is made to stand and move, he goes off by short steps, with scarcely any flexion of the extremities; the dorsal face of the claws rubs the ground. Flexion of the knee is difficult to obtain. The neck is very stiff. Palpation and pressure of the fore legs are not painful. Appetite is still good. After a short time paralysis of the hind legs occurs. The animal moves with his fore legs, when held up, and drags his hind feet after him. He remains in lateral decubitus, but yet eats, providing food is brought to his mouth. The temperature varies between 102 and 104 degrees. The patellar reflex is lost on both sides. Defecation and micturation normal. After seven days of this condition the dog died, and at the post-mortem were found: Infiltration and abscess of the longus colli muscle, periostosis of the vertebro-costal articulations from the second to the eighth vertebræ, separation of the third and fourth dorsal vertebræ, and between them dark thick blood mixed with small pieces of bones, infiltration of blood in the vertebral canal, lesions of myelitis in the cord.—(*Annales de Brux.*)

CONTRACTURE OF THE ANTERIOR LEGS IN A COLT [*By Mr. Nizel*].—A colt just born is unable to stand up, and careful examination reveals a severe contracture (retraction) of the anterior extensors of the phalanges to such extent that the posterior face of the fetlock rests on the ground, the toe turned upwards. In front of the fetlock the hard cord of the extensors is felt, while on the back the relaxation of the flexors is readily detected. The treatment consisted in tenotomy of the extensors, made with all careful antiseptic precautions, and application upon both legs from the elbow down of four light splints, held in place by bands which hold the extremities in their proper direction. The hygienic treatment was difficult to carry out, the animal (instinctively lying down most of the time) was raised every now and then, allowed to suck, and then laid down; careful attention to avoid bed sores was also required. The dressings were removed after 21 days. The flexor tendons have resumed their normal tension, the colt rests pretty well on its feet; however, now and then dropping on its fetlocks; the wounds of tenotomy have healed and every indication shows that ultimately the little fellow will stand in a normal condition.—(*Annales de Brux.*)

TORSION OF THE MESENTERY A CAUSE OF INTESTINAL OBSTRUCTION IN A DOG [*By Mr. Lienaux*].—A fox-terrier, six months old, had been thrown in the air and made to turn somersaults by children, and an hour after is taken with violent pains, a few vomitings, becomes quiet, assumes a sternal position and dies in 12 or 15 hours. At the post-mortem it is found that the whole mass of the small intestines has been twisted round the point of attachment of the mesentery, drawn up to the lumbar region, and thus cutting off the circulation, they are presenting lesions of gangrene. The other part of the abdomen looked normal. The torsion of the mesentery had taken place in such a manner that to undo it, it was necessary to give the intestinal mass a rotatory motion from right to left and from forward backward. By this motion, the intestines are able to resume their position and leave the lumbar region. Spread, the mesentery is covered with hæmorrhagic spots. Surgical interference might have been indicated, but the rapidity of the disease prevented it;—and, anyhow, the diagnosis was too doubtful to justify it.—(*Annales de Brux.*)

LAPARO-GASTROTOMY AND EXTRACTION OF A FOREIGN BODY IN A DOG [*By Mr. J. Hamoir*].—A young dog, playful and mischievous, as animals of his age are, is suddenly taken with groaning pains and vomiting. He has an abscess on the anterior part of the neck, and seems to recover. A short time after the symptoms return, the appetite is lost, the dog loses flesh rapidly. An abscess forms on the right costal region, this ulcerates, and from the ulceration a long pin is partly pulled out, but held in place, in the abdomen, by the other extremity. The operation, carried out antiseptically, consisted in division of the intercostal muscle, exposure of the stomach, which is found adherent to the tissues surrounding, and which carefully separated with the blunt end of the scissors, permits the exit of the head of the pin and its final extraction; the borders of the gastric wound being held by forceps, an aseptic ligature is applied all round the stump, and passed afterward in front and behind through the musculo-cutaneous border of the parietal wound. The outside trauma is disinfected. Complete diet, carefully regulated. Antiseptic lotions. Radical recovery in a short time.—(*Annales de Brux.*)

THERAPEUTICAL REVIEW.

CREOSOTE IN CHRONIC CONSTIPATION.—Creosote made of beechwood tree, given in doses of a few drops in a little water (gradually increasing from 1 to 8) gives very good results in chronic constipation of man. It acts as a tonic and an antiseptic. Its use in veterinary medicine for dogs would also probably be advantageous.

MIXTURE AGAINST TAPEWORM.—Used in human practice and recommended also for canines. After the effects of a dose of castor oil or of a saline, a dessertspoonful of the following is taken every hour: ℞. Chloroformed alcohol at 10 per cent., 8 grammes; rectified spir. of turpentine and ethered extract of male fern, of each 4 grammes; glycerine, 15 grammes.

TO OVERCOME TETANIC CONTRACTIONS OF THE UTERUS DURING LABOR.—Prof. Müller recommends the administration of five drops of the following mixture in a little tepid water: ℞. Tinct of iodine, 1 gramme; alcohol, 2 grammes.—(*Thier. Woch.*)

BARIUM CHLORIDE IN TYMPANITES OF CATTLE.—This preparation has been used successfully in that disease, not in intravenous injections, as in colics of horses, but in solution of water and by drenches. Marder has obtained good results with it in a bull in doses of 5 grammes renewed every three hours. Taber gave at once 15 grammes in a cow, 18 in a bull and 8 to a calf.—(*Berl. Thier. Woch* and *Deut. Thier. Woch.*)

MIXTURE FOR LOCAL ANÆSTHESIA.—Hall recommends as more active and easier to keep than solutions of cocaine, a mixture of 10 per cent. of resorcine and 20 per cent. of cocaine. He uses it with a brush over the skin.—(*Berl. Thier. Woch.* and *Deut. Thier. Woch.*)

TREATMENT OF MANGE IN THE DOG.—Under the name of scabinol, Mr. Issleit recommends the following prescription, with which he has obtained excellent results in hundreds of dogs: Potassic soap, 4 parts; naphthol, 1 part; styrax, 2 parts; extract of tobacco, 3 parts. The compound is used in frictions three days consecutively over one-third of the diseased cutaneous surface, to avoid general effects. After these frictions, the whole body is washed for three days with diluted scabinol (2 tablespoonfuls in a quart of water). The scabinol reddens the skin, but in drying leaves a soft surface, which drops off after five or six days.—(*Berl. Thier. Woch.* and *Deut. Thier. Woch.*)

OBITUARY.

SAMUEL E. QUEEN, V. S.—At his residence, 128 South Fifth Street, Steubenville, Ohio, January 13, 1898, after a lingering illness, Dr. Samuel E. Queen, V. S. He was born in Carroll County, Ohio, May 22, 1862. He leaves a wife and two children to mourn his early demise. He was a graduate of the Ontario Veterinary College, class of '85, and had been practising in Steubenville since leaving college, where by his skill, integrity and high moral worth, he had built up an extensive practice.

His many friends, both in and out of the profession, will mourn the loss of Dr. Queen, as he was possessed of a kind heart, coupled with a good Christian character.

A CLASS MATE, R. J. M.

REVIEW SUBSCRIBERS should remember that subscriptions to Vol. XXII (beginning with April number) are now due, and must be promptly paid if they wish the journal continued to their addresses. Remember also that *you can't afford to let the* REVIEW *cease its visits.*

THE CAREER AND DIREFUL FATE OF VETERINARY SURGEON PEAS.

At First—

He'd the deep and profound knowledge
Learned at *the* veterinary college,
Tuberculosis and neuroses,
Diagnosing (?) displaced cæcum,
Vis a tergo, metric system,
Inulin and hæmachroses,
Strongylus-ovis-pulmonalis,
Stomach flayed by paracentesis,
Sarcoptes and diapedesis,
Composition of the fæces,—
These, all these, and many more than these,
Were known to Veterinary Surgeon Peas.

And Then—

He knew all the carbohydrates
And their effect on nutrition,
Nitrogen and splenic function,
Hyaline degeneration,
Knew the history of paresis
From the time of King Rameses,
Knew specifics for condition,
Inflammation, exudation,
Thoroughpin and exostosis,
Also how to aid osmosis,—
These, all these, many more than these,
Were known to Veterinary Surgeon Peas.

Seeking the Bubble—

He was stuffed with erudition
As you stuff a leather cushion,
Cutting " rigs " and balanced ration,
Manyplies with great impaction,
Myxœdema, vaccination,
Antitoxine agitation,
Multiplied exaggeration;
Authority on legislation,
Germicidal cultivation;

Little practice, much vacation,—
These, all these, and many more than these,
Were known to Veterinary Surgeon Peas.

Age of Usefulness—

Veterinary Surgeon Peas—Age of Usefulness.

On old placentæ he was skilled,
And with cures for spavin filled.
He also made hermetic powder
That wounds nine miles point blank would solder.
Toiled this man with bots and colic,
Giving shot-gun pills di'bolic,
And dehorning rams hydraulic.
Still he toiled for promised pay,
Trusting, trusting every day
For his pay to come "next May,"—
These, all these, and many more than these,
Were known to Veterinary Surgeon Peas.

Last Scene of All.

"You are great and we will tell it,"
Quoth his patrons for their credit.
Ods bodkins! he yokels trusted
Till his bank account was busted.
Thus he toiled without collecting,
Making debts and just existing;
Credit, trusting was his feasting,
So he leaner grew with feeding.
Larger grew pathetic patches
On once bright and sporty breeches,
Till he heard the Angel call,—

* * * * *

Now—he needs no pants at all.

S. R. HOWARD.

REPRESENTATIVE AMERICAN LABORATORIES.—In a department bearing this title the *Journal of Applied Microscopy* for February describes in a long and well-illustrated article the laboratories of microscopy, histology, and embryology, and of bacteriology and pathology, of Cornell University, including a very perfect cut of the New York State Veterinary College.

CORRESPONDENCE.

VETERINARY LEGISLATION IN NEW YORK.

ITHACA, N. Y., February 20, 1898.

Editors American Veterinary Review:

DEAR SIRS: The annual convening of the New York Legislature is signalized by the usual attacks upon the veterinary education and practice laws of the State, which are, as is well known, in advance of veterinary laws in other States.

One bill favors admitting to practice a new batch of charlatans who during the past three years have practiced contrary to law; another is in the interest of students who entered veterinary colleges in 1896 without complying with the laws then in force as to matriculation, and judging from the editorial pages of the REVIEW we are next to see a determined effort to wipe out entrance requirements for veterinary education.

Upon any one of these questions opinions may readily differ, and the writer, viewing the question of entrance examination from a different outlook, may be pardoned for holding opinions at variance with those of the editor of the REVIEW, believing that the difficulties under which the New York City colleges seem to be laboring are not due chiefly to veterinary legislation.

The late "boom" in livestock had as a companion a similar flurry in pseudo-veterinary education, causing the upshot rather than growth of a number of alleged veterinary colleges beyond the real needs of the public.

The most conspicuous character of many of these was a keen competition as to which institution could admit the most ignorant man, keep him the shortest time at the lowest price and "graduate" him with the least possible inconvenience. This pandemonium quickly filled the country with a class of veterinarians (pardon the nomenclature) whose merits or rather demerits were quickly recognized by an intelligent public. While it is alleged that P. T. Barnum held that the American people like to be humbugged, it might have been added that they are to some degree choice as to how and by whom the process shall be applied. Then came the collapse of the livestock boom and logically a pseudo-profession living upon a host as a parasite experiences ill health when the host dies.

As a result many of these "veterinarians" forsook their "profession" and turned their talents to the carpenter, barber or other trade for which their talents better fitted them, others led and are still leading an uncertain existence, and enjoying a plane in the social and business world not higher than their natural talents command.

Such a state of affairs induced a serious and rapid decline in the number of students in almost every college in the country.

It was readily seen by the public that a certain class of veterinarian was useful, in fact, we had reached a stage of civilization where a higher type of veterinarian was essential to the good of society.

Up to this time the veterinary colleges had been chiefly of a type we may denominate "commercial," that is, they were equipped and conducted by private parties who were under necessity of earning a rental upon college property and obtaining a professional fee for the work of teaching. No wealthy philanthropist had endowed, no State had supported them.

The more worthy ones accomplished a work of inestimable value, which although in part obscured by the inferior institutions can not pass unseen. Their graduates constituted a vast educational force, a band of pioneers who made the existence of other kinds of colleges possible.

When the public demanded better educated veterinarians many of the better pioneer colleges increased their curricula from two to three years of their own volition, thus showing a willingness to keep pace to a degree at least with public sentiment. In the meantime philanthropists and States had turned active attention to veterinary education, and, passing by the pioneer colleges, laid what they apparently thought more enduring and extensive foundations in connection with great universities and concurrently have enacted veterinary practice laws in harmony with the sentiment underlying the new college foundations, which may incidentally be inimical to the interests of other colleges.

In what degree these movements in the field of veterinary education and practice may have injured the colleges in New York City we have no data to show.

For several years prior to the New York laws these colleges had been declining heavily in attendance. It is true they had raised their courses from two to three years, but if this alone were the case, the cheap and easy two-year colleges should have profited thereby, but all the data at hand shows instead that they have suffered in an equal ratio to the colleges demanding longer terms of study.

We have no data to show that New York City colleges have suffered more severely in diminution of attendance than other commercial colleges, while those schools endowed or maintained by the various States have suffered no serious diminution, if any at all, in attendance and find their work on the whole moving on hopefully, not especially in New York, but in the United States generally, yet their requirements for matriculation and time of attendance are constantly higher than those of other colleges.

It is so with the medical colleges, those heavily endowed and financially independent command just as good attendance with four years' course and high entrance terms as under prior conditions, hence the College of Physicians and Surgeons of New York is not clamoring for a lowering of entrance requirements, and Johns Hopkins Medical School increases its attendance as it raises its admission, which now rests at a college degree as a minimum for entrance.

The veterinary matriculation requirements do not seem to us so ridiculous and excessive as to the editor of the REVIEW.

We do not know of a branch of learning required which is not of value to the candidate for a veterinary degree. He is not required to pass an examination in Greek, Latin or Hungarian, geometry, calculus, music or painting. He may, if he elect, be examined in botany, chemistry, zoölogy, physiology, French or German, any or all of which the editor of the REVIEW will agree with us would materially aid the student.

The law *demands* that the veterinary student shall be fairly versed in English, and this we think the editor will agree is well, even though one prominent college does not require a student to be able to read or write until half through his course, the educational methods being somehow adapted to overcome the necessity for these "extras" during the first half of the course.

In short, the laws of New York require that the student shall before entering have accomplished four years of high school work or its equivalent, permitting him to substitute almost any branch of learning for any other one, holding firmly to but few basic ones like English.

The advance in requirements has admittedly been abrupt, from no requirement in 1895, to two years high school work in 1896, thence to four years high school work or its equivalent in 1897. By this abruptness, no candidate being barred in 1895, and two years academic work required for 1896, those entering in 1896 were not candidates in 1895, as anyone who could not enter then could not hope to enter in 1896, and work as he might could not matriculate in 1897. In other words, the advancement in requirement was 100 per cent. greater than the capacity of the student to learn, so that a student failing in 1896 must make extra time in high school work in order to enter in 1898.

There is a goodly number of candidates for admission now at work preparing to meet the entrance requirements and we favor allowing them to go on and complete their preparation.

The veterinarians in New York outside the metropolis are almost to a man of foreign education, the New York schools failing to secure their attendance. Now our laws practically exclude foreign graduates, and open a new field to the complaining colleges, so that while the sudden advance in requirements may work temporary embarrassment, it must in our judgment prove of distinct advantage in the hold upon territory and in the inestimable improvement in the class of matriculants, whether viewed from an educational, social, or other essential standpoint.

The number of veterinarians in the State will be regulated by the demand and the latter by the class of veterinarians hereafter licensed by our State Examining Board. High requirements have not caused a dearth of veterinarians in France or Germany and can not do it in New York or any other commonwealth.

We consequently prefer to stand by the laws, advance the standard of veterinary education and practice in New York to a degree which will command patronage and applause throughout the nation. W. L. WILLIAMS.

New York State Veterinary College.

BIBLIOGRAPHY.

VETERINARY BLUE BOOK, 1898. Published by authority of the Veterinary Medical Association of New York County. Edited by Rush Shippen Huidekoper, M. D., Veterinarian (Alfort), President of the Association.

A quotation from the introduction to the long-looked-for "Blue Book," which made its appearance on the first of February, will explain the motives which prompted its production and show the objects which it hopes to accomplish: "The Veterinary Blue Book is the product of the necessity which certain veterinarians felt they required to establish their profession upon a more definite basis than had existed a few years ago. When legislation undertook the regulation of the practice of veterinary medicine in New York State, the only organized body of veterinarians in it was the State Society, to which only two or three practitioners in New York City belonged. Throughout the State men of all classes assumed any veterinary title which they saw fit, and when the law commanded the first registration of veterinarians, Patrick $\overset{\text{his}}{\underset{\text{mark}}{\times}}$ O'Grady and an educated graduate from a four-years' course in a German university were peers in its eyes. The practice of veterinary medicine was equally deplorable. Many graduates and non-graduates competed in augmenting their trade by the sale of quack medicines. By familiar association with coachmen and grooms, and liberal division with them of the money charged the horse-owner, veterinary practices were supposed to be built up. . . . " etc. Following this statement it shows the progress that is being made and the efforts being put forth to purge the list of those legally qualified to practice of all who have not the right.

No statement of the intended scope of the "Blue Book" has approached its reality, it having grown from an intentional pamphlet of 100 pages to a very complete volume of nearly 400, and includes almost every subject bearing in any way upon the profession. Every State in the Union and the Canadian Provinces are succinctly taken up, and every aspect of the profession in each commonwealth is fully given from the law governing its practice (if one exists), State and local societies, State Veterinarian, down to the prominent practitioners, and in the case of New York a very complete list of all registered men who are in practice at present. A list of veterinarians employed by the United States Government, in the Departments of Agriculture and War; the tariff as it affects live stock; rules and regulations of the Bureau of Animal Industry concerning transportation of live stock and kindred subjects, including quarantine regulations of the country; acts of Congress bearing upon animal economy; health and veterinary sanitary laws of the various States; the jockey club, its members and officers, with the rules of racing; American turf congress with its rules and the rules of betting; Steeplechase and Hunt Association; National Trotting Association, officers, rules and regulations; American Trotting Association; Polo Association and its rules; Horse Breeders' Association; dog clubs of America; transportation of animals by express, by railroad and steamships, with details by the various routes; records of horses' speed under every condition and in various countries; rules of the road in New York

City; the licensing of dogs and the American Society for the Prevention of Cruelty to Animals; barnyard and farm manure; live stock in the United States; American horses in England; various statistical tables referring to animal interests, and much other useful information.

The above brief and incomplete recapitulation of the salient points of the "Blue Book" gives but an imperfect idea of the immensity of the work which the editor has gathered between the covers, and to the veterinarian or man interested in live stock it can truly be said that the book is invaluable. That anyone could have been found willing to undertake the preparation of so much information—involving as it does a vast amount of correspondence and details, is a matter of congratulation, and the least that the profession can offer in appreciation of the task which has been so well accomplished is to buy it. We trust that the present issue may be so well received by the profession everywhere that the editor will feel encouraged to reissue it annually or biennially, as warranted by its sale.

SOCIETY MEETINGS.

CHICAGO VETERINARY SOCIETY.

The regular meeting of the society was held at the Sherman House, Jan. 13th, and the following members were present: President, R. G. Walker; Secretary, James Henderson; R. Gysel, L. Campbell, P. Quitman, E. L. Quitman, Jos. Hughes, L. A. Merillat, J. Robertson, B. A. Pierce, A. H. Baker, C. A. White, O. C. Dyson, C. G. Nelson, F. J. Leith, C. C. Sayre, A. E. Richel, J. B. Clancy, A. O. Caspar, D. Kermath, Frank Allen, O. K. Dubia, W. C. McGarth.

The minutes of the last meeting were approved as read.

Secretary's Report.—He read a letter sent by him to the Civil Service Board of Commissioners as instructed at the last meeting asking them to appoint a time of meeting with our Legislative Committee. A reply from the Secretary of the Board was also read granting our request.

Report of Legislative Committee.—Dr. Hughes, aschairman, gave an account of the meeting above arranged for. The Board averred that it had many examinations on hand, in each of which large numbers of men were involved. That in the examination for the purpose of securing a veterinarian to attend the police horses only one man was concerned, and on that account it would be postponed in favor of those examinations in which numerous positions were to be disposed of. The Board stated, however, that the examinations in which we were interested would be held before its term of office expired—that is, before six months; but further that it might be held any time after two weeks, the date depending upon the manner in which they prospered with the preferred examinations. The Board also stated that the examination would, if possible, be conducted by expert veterinarians outside of the city, as it would be unfair to have a member of our society examining both his fellow-members and other practicing veterinarians outside of the society at the same time. This last arrangement was cheerfully accepted by the committee.

Unfinished Business.—At our last meeting (Dec. 9th) a motion was carried that all action in expelling those of our members who retained their commissions as Assistant State Veterinarians to the present empirical chief should be postponed until this meeting. After considerable discussion, the following motion was made by L. Campbell, seconded by the Secretary, and carried by the meeting: "That a vote by ballot be taken to decide whether these gentlemen be retained as members or not." Twenty one ballots were cast, ten for expulsion and eleven for retention.

REGULAR PROGRAMME.

Dr. Gysel read a paper on "The Operative Treatment of Quittor."

The society then entered upon the work of drafting "a guide which would aid us in distinguishing a sound from an unsound or 'serviceably sound' horse when under professional examination."

The following are our reporter's notes upon this effort:

Dr. Quitman.—In making an examination for soundness, always remember that a horse is a living monument to its examiner, and for that reason it is important to be extremely careful. It is better to be sure than sorry.

Diseased or Absent Molars.—A diseased molar is unquestionably an unsoundness, because (1) that molar will sooner or later cause trouble in mastication of food, or (2) fistula or necrosis of the lower jaw or nasal gleet of the upper. I unquestionably would reject a horse having a decaying or absent molar.

Absent Molar.—We must look at this from two sides. If the horse is being sold for a fair price, and, being otherwise sound, I would reject him. Some say it is pretty harsh, yet we know the cavity will lead to several different results. The opposite tooth will sooner or later grow into that cavity, and if not cut off, will bruise the opposing jaw. The animal may be serviceably sound.

Cribbing.—This I will take up along with wind-sucking. Wind-sucking usually follows cribbing, and when he gets more accomplished he becomes a wind-sucker. A cribber must have some object on which to press his teeth. A cribber may become a wind-sucker in a very short time, and I have seen a horse graduate in one case in about four days. It is certainly a cause to reject a horse. Its simplest fault is ruining the general appearance of the teeth. It is an unsoundness, or it leads to unsoundness. It may be a symptom of gastric irritation and chronic indigestion, unless gotten by imitation. Cribbing, if only a habit, leads to wind-sucking, and wind-sucking leads to constant bloating and irritation of the digestive apparatus, or is due to that condition. My opinion is that cribbing is an unsoundness, and wind-sucking still more so.

Misrepresentation of Age.—This is a little hard to define as an unsoundness. If the animal is perfectly sound, that could not be called an unsoundness. The animal could be returned as being unfit for use if purchased. Forcing the age by extracting the milk teeth before they are ready to be shed is easy to tell, and the rejection of the animal should depend upon his acceptability to the buyer.

Side-pulling.—This takes in its scope a hard-mouthed animal. Side-pulling is a very disagreeable and dangerous habit, and I claim an animal so affected is unsound. Side-pulling may be due to a habit, or from sharp or diseased teeth. It is sometimes a result of nasal gleet and brain pressure. Sometimes there is no diseased condition at all, and he may become a side-puller by having been driven double and then single. It is a very dangerous habit, especially in crowded cities, as the animal may be the cause of bringing his owner into court. Hard-mouth comes out in driving. It is usually more or less easy to tell by the cicatrized condition of the mouth.

Dr. Merillat.—I will include diseased and absent molars as one and speak of them together. On account of the importance of mastication, I would consider it a serious lesion. There is no animal in the order of mammalia or herbivora that needs such an extensive mechanism of mastication as does the horse. His food is dry and hard in texture, and must be thoroughly masticated for his gastric digestion, and such diseased molars must lead to serious disease sooner or later; and, again, disease of one molar is an indication that others are not too sound. You will find by observation that an animal with a diseased molar, if it occurs during the earlier years of his life, is quite sure to have an early disturbance of his whole dental mechanism, as I believe that diseased teeth are due to faulty development.

Side-pulling is a bane to the man practising dentistry. It is a simple habit to the laymen, and one that the laity believe the veterinarian should easily remedy, whether it is caused by abrasions of the buccal membrane or from sharp teeth of any kind. In the latter instance dentists can be of some avail. Another great cause of side-pulling in my observation is lameness or soreness in one side of the body. Navicular disease is another cause. You will find this chiefly in the animal that does not pull much. He is the worst side-puller, and does not take the line, and keeps edging from one side of the street to the other. I firmly believe that Dr. Quitman's central cause can be one of the etiological factors in this condition, namely, lesions of the brain, but I do not believe that softening could be put under that head, but chronic hydrocephalus. Ocular disease is another great cause. An animal that has not good and perfect sight might have it from central origin. In these cases it is foolish to try and cure the side-puller by removing and cutting the molar.

Dr. Dyson.—In my experience it is a habit and due in a great many instances to over-checking or faulty driving. A good remedy for its cure is a change of driver, liberal use of the whip and to abandon the high-checking of the horse. I think in the majority of cases it is merely a habit.

Dr. Wyman.—I was so forcibly struck when the statement was made of softening of the brain and cerebritis that I thought at some time or other during my life at college that I might have been negligent in gathering the facts, and for that reason only did I beg your permission to speak on the question which before so suddenly came to an end. Hydrocephalus is a condition where we have the lateral ventricles, the third and never the fourth filled with serum. This serum is the result of either a transudation or exudation from the choroid plexuses. It may follow an acute lepto-meningitis or be an œdema pure and simple. The condition which we usually find on post-mortem is a serum amounting from 20 to 40 grammes, 40 being the utmost given by Degraf. Lepto-meningitis is only too often the result of an infection, and softening of the brain never takes place at all, excepting traumatism is present. The point I wish to make, I put it of traumatic origin with subsequent infection.

Dr. Quitman.—I mentioned it was due to an injury and believe the majority of so-called dummies could be traced to traumatic injury. It is a common occurrence to see a horse hit over the head with a broom stick or anything of that kind, and the condition that we find as dummy very closely resembles the symptoms that follow, and while I do not doubt the condition that any pressure on the brain will cause these conditions I claim that softening off the brain can be a cause.

Dr. Wyman.—The doctor said that softening in the horse might lead to this trouble. Softening of the brain is either of traumatic or infectious origin and that it does take place is a fact. We do find it, especially as a complication of those troubles where we have a metastasis that may lead to abscess formation.

Dr. A. H. Baker.—I do not consider a horse with an absent molar, and otherwise sound, as unsound. The mere fact that the corresponding molar extending down into this cavity and into the tissues below as being sufficient excuse for rejection of the animal are insufficient. There is no horse that will not require attention sooner or later. They are all composed of flesh and blood and when put into service will all go wrong. Where there is an absent molar the opposing molar needs excising. A horse with a diseased molar is unsound. Cribbing *per se* is not unsoundness. It is a habit on which the common law will allow a man to return a horse. It is a habit that certainly is very objectionable and will lead to defects and disorders which we, as examiners, have nothing to do with. Misrepresentation of age is not unsoundness. It is a fraud which the common law would punish. It does not interfere with health. He is just as healthy as though the age were not misrepresented. A veterinarian always gives his opinion regardless of misrepresentation. If a horse is nine and is represented as six, that should not influence the veterinarian, who should give his opinion regardless of whether the seller is telling a lie or not. Misrepresentation is fraud pure and simple and not unsoundness. Side-pulling due to no pathological lesion is not unsoundness. In the majority of cases it is due to sharp teeth. A dentist will correct it. If the horse is lame and is a side-puller it is unsound. Wind-sucking is a very serious question, because it is invariably associated with indigestion. Fifty per cent. of cribbers are wind-suckers and wind-sucking is unsoundness. It has always been a question in my mind as to whether a veterinary examiner of a horse for soundness should deviate at all from strictly or strict soundness. If we do not deviate from the point of soundness we pass very few horses, and interfere with the horse trade. If I found a diseased condition that would in any way reduce the value I would mention it. Absent molars is one of these cases. I would pass a horse with such a condition as sound if the cavity was closed with cicatricial tissue unless pinned down to a point of strict soundness. A horse with absent molars I would pass. My experience bears me out in this. I believe a veterinary examiner should be more or less liberal in his report. He should avoid as much as possible interfering with the horse business or trade. Protect your client, and when it is for his interest reject. Your opinion must be based upon whether the horse's utility is interfered with or not.

Dr. Robertson.—I do not see how a horse with diseased or absent molars could be strictly sound, but I have been lax and have not examined many horse's molars. Cribbing is a bad habit and may lead to unsoundness, and a cribber should be rejected. Wind-sucking is also a cause for rejection. Misrepresentation of age is a question for the law to decide. We are not supposed to take the dealer's word for the horse's age. Side-pulling is a habit. Wind-sucking I would consider an unsoundness and cribbing a habit from the simple fact that I believe it can be traced to disordered digestion.

Dr. Hughes.—Diseased teeth in the upper jaw may be a cause of ulceration, a factor which might cause abscess in the maxillary sinus and nasal gleet. I confess I rarely look in the mouth for diseased teeth, at the same time that does not avert the fact that an absent molar means an unsound horse, and I do not think a man is justified in passing a horse with an absent molar. If you extract a diseased tooth that means that the horse is laid up for several weeks. I hold that cribbing as a rule is associated with wind-sucking. Now comes up the question as to what is wind-sucking. Is it a habit by which the animal grasps a mouthful of air and lets it pass down his œsophagus? No, we do not know anything about it. Misrepresentation of age is a question to be decided by law. As to the cause of side-pulling and definition, I must confess I have learned a great deal about it to-night. Dr. Wyman says it is a diseased condition of the brain, and the question of dummy came up, also cerebritis and softening of the brain. Dr. Quitman says a dummy means a softening of the brain. Dr. Wyman has taken the position that softening results from a traumatism, and that with the traumatism there must be infection.

Dr. Quitman.—In hydrocephalus due to meningitis, some of the primary symptoms are those of either motor or sensory irritation, locomotor ataxia or elevation of the legs; on the other hand, the slightest blood-clot may cause a paresis. Now, if we have this effusion into these ventricles large enough to cause this idiotic condition, how is it we do not have paresis? Is it chronic meningitis that causes that abnormal condition? If there is chronic meningitis, what causes these periods of normality? In early stages of cerebral softening they can be brought about by an extra amount of blood being carried to the parts, and dummies can be caused by considerable effusion into the ventricles of the brain and into the cervical portion of the cord and into the subarachnoidean space.

JAMES HENDERSON, M.R.C.V.S., *Secretary.*

The February meeting was called to order by Dr. R. G. Walker, President, on the evening of February 10th, twenty-one members being present.

Under "Remarks by the President," Dr. Walker said "that he was greatly surprised at the result of the vote cast as to the retention or expulsion of Drs. B. A. Pierce and W. E. McGarth, assistants to a non-graduate State veterinarian. That had the vote been a tie that the President would have most certainly voted for expulsion. That the retention of these members was antagonistic to all previous sentiments shown by the society. That under new business a motion for reconsideration of the vote would be in order; the same to be voted upon at the next regular meeting if the vote for reconsideration was carried." The President next presented a letter from the Secretary, Dr. James Henderson, resigning from the society, as he intended leaving America to accept a desirable position in Scotland. It was moved and seconded that a committee of five members be appointed by the President to draught resolutions of thanks to Dr. Henderson for his efforts and work in the behalf of the society and regrets at his necessary resignation. Carried.

The nominations for Secretary being in order, it was moved and seconded that Dr. Campbell be elected to the office, as his departure from Chicago had been postponed. Voted and carried.

The committee appointed to draught the resolutions for Dr. Henderson is Dr. Hughes, Dr. Robertson. Dr. E. L. Quitman, Dr. Ryan and Dr. Baker.

There was no report from the Secretary or the Treasurer.

Dr. Worms opened the discussion by reading the following paper:

Partial Amputation of the Tongue.—This condition is frequently met with and is due to mechanical injuries. Moreover, stablemen in order to control unruly or sensitive horses during cleaning, not infrequently pass a cord around the tongue. If this be sharply pulled, the tongue may easily be cut through, and the thinner the cord the more easily does the accident occur. Snaffle bits produce the same effect, especially if worn. The tongue may also be injured by sharp or displaced teeth.

Rupture of the frænum linguæ sometimes occurs in horses, resulting in suppuration, abscess formation and the production of fistulæ. Steffen, a foreign veterinarian, saw the point of a foal's tongue become gangrenous and slough after having been violently handled during some dental operation. His report of the case points to a blood vessel having been ruptured.

The diagnosis presents no difficulty. The irritation in the mouth, salivation, want of appetite or of slow, cautious mastication readily indicate the nature of the injury and its extent. Healing is usually rapid and certain, though transverse wounds of the tongue may leave a deep depression. But even this is no great drawback, and is only worth notice inasmuch as the animal wastes food in eating, and the tongue may be lacerated if forcibly handled during examination. But a portion of the tongue may be torn away in the first instance or later, and if the frænum linguæ be involved mastication will be rendered difficult.

Attempts to cure protrusion of the tongue have shown that in horses the removal of three-fourths of an inch causes no inconvenience, but where more is lost the animals are unable to bring the food between the back teeth. At times they seek to effect this by holding the head in the air like chickens when drinking, but at best some food must be wasted, and mastication takes longer. Graf, a foreigner, records that a horse which had lost the point of the tongue had severe swelling of the remainder, accompanied by salivation and inability to eat solid food. Only fluids and mashes could be taken. When the wound had cicatrized the stump only extended about three-fourths of an inch beyond the first molar. In three weeks the horse could again eat ordinary food, but took three times as long as formerly to do so. Ludecke, another foreigner, described a similar case in which the tongue was lost as far as the commencement of the frænum, but nevertheless the horse could eat as usual. I regard such a horse as unsound.

Paralysis of the Tongue (Glossoplegia).—Inflammatory processes may interfere with the movements of the tongue, but its paralysis depends on injury to the hypoglossal nerve which supplies motor filaments to the collective muscles of the tongue and most of those of the hyoid bone. Wounds, abscesses, or inflammatory processes may affect the nerves at some point of its course or at its origin on the inferior surface of the medulla and thus produce glossoplegia.

Kater (foreigner) saw one-sided paralysis occur in a foal which three months before had been wounded in the throat with a knife. On the left side the muscles of the tongue had so completely disappeared that at the point the upper and lower coverings of the mucous membrane were in contact. This paralysis is also seen during severe infections, as of contagious pleuro-pneumonia of the horse. In central paralysis both nerves usually suffer and of course both sides of the tongue, for the two hypoglossal nerves arise very close together. In the horse paralysis of the tongue sometimes accompanies acute meningitis or hydrocephalus. But all double-sided paralysis is not necessarily central. Diplegia occurs in horses whose tongues have been roughly handled and where both nerves have been injured.

The symptoms of one-sided paralysis are displacement of the tongue and difficulty in mastication and deglutition. In double-sided paralysis both acts become nearly impossible, particularly the latter. The tongue generally hangs from the mouth. In protracted cases the muscles atrophy, though of course in single-sided paralysis only those of the paralyzed side suffer. The disease must not be confounded with the so-called protrusion where the tongue is voluntarily lolled out of the mouth. Paralysis is shown by distortion and inability to retract the tongue. The prognosis is unfavorable.

Salivary Fistula.—Wounds of the salivary glands and their ducts often fail to heal because the continual flow of saliva pushes aside the granulations and hinders closure. The gland epithelium finally unites with that of the outer skin and through the opening so formed saliva flows continually. Although the general condition of the animal is only slightly affected much saliva escapes during eating and mats the hair of the cheek, finally producing a blemish. This is an unsoundness.

Salivary Calculi.—These concretions form chiefly in the parotid, sublingual and submaxillary ducts. They are caused by an accidental nucleus, such as a small piece of hay or corn or other foreign body penetrating the canal, to which the salts of the saliva adhere, forming roundish or mulberry concretions, blocking up the duct, which becomes enlarged and distended with saliva. Sometimes an oat insinuates itself into the orifice of the parotid duct, producing distension of it by saliva, causing it to appear as a pendulous sac on the borders of the jaw. The concretion is only remarked after it has attained a certain size. It appears as a hard, sharply defined, slightly movable swelling, generally lying on the outer surface of the jaw, close to the front of the buccal opening of Steno's duct, but sometimes on the posterior border of the under jaw. The salivary duct is usually distended behind the swelling, and when the flow of saliva is entirely shut off the gland is enlarged. Inflammation is seldom present, but may appear and lead to formation of abscesses. Unsound.

Polypi.—A polypus may be defined to be a tumor attached by means of a narrow pedicle, and the most familiar example is the nasal polypus, attached to the superior part of the nostril. It is of softish consistence; bleeding when injured; often containing a limpid fluid in its centre, growing downwards, filling the cavity of the nostril, causing much uneasiness to the animal and interfering very materially with the respiratory function. There is a discharge from the affected nostril, causing much uneasiness to the animal, often tinged with blood, especially during exercise or work. The animal makes a snuffling sound in its breathing and frequently sneezes. The tumor cannot always be seen, but by growth becomes visible to the examiner. Sometimes it grows in the contrary direction and falls into the isthmus and is apt to become temporarily lodged in the larynx, causing the animal to breathe with the greatest difficulty, with a loud roaring sound and often to fall down from exhaustion and want of breath. By great effort the animal coughs the obstructing tumor from the larynx into the fauces again, and then the roaring sound and difficulty of breathing disappear. This is an unsoundness.

Nasal Catarrh.—Catarrh means a discharge of fluid from the mucous membrane. The form of catarrh under present consideration is at first a congestion, followed by inflammation of the mucous membrane of the nasal chamber—the Schneiderian or pituitary membrane, as it is specifically termed. The inflammation usually extends to the membrane of the sinuses of the head and often to the membrane of the larynx and pharynx, causing the complication of sore throat. Quite frequently the membrane of the eyes is also affected, as evidenced by its congested condition and the flow of tears down over the cheeks; the nasal duct is lined with a continuation of the same membrane, and hence the inflammation of the eyes is only an extension of the disease over a continuous tract and not a special disease, as often supposed. The membrane of the nasal duct being swollen, the effect of the inflammation or congestion, the tears cannot flow freely through it, therefore they escape from the eyes and flow over the cheeks. *Symptoms.*—The membrane at the beginning of the attack is dry, congested and irritable; it is of a much deeper hue than natural pinkish red or red; soon a watery discharge from the nostril makes its appearance; the eyes may be also more or less affected and tears flow over the cheeks. Animal may be dull, and frequently he emits a sort of sneezing snort, but does not cough unless the throat is affected. A few days after the attack begins the discharge from the nostrils changes from a watery to that of a thick mucilaginous state of a yellowish white color and may be more or less profuse. Often the appetite is lost and the animal becomes debilitated. There is a rise in pulse and temperature. I regard such an animal unsound.

Nasal Cysts.—This is a small globular tumor sometimes found within the nostril, under that part of the skin that is seen to puff or rise and fall when a horse is exerted and breathing hard. These tumors contain matter of a cheesy consistency and are simple. If the tumor is well opened and the matter squeezed out nature will do the rest to perform a perfect cure. If the opening is made from outside through the skin it should be at the most dependent part, but much the best way is to open the tumor from inside. I regard such an animal as sound.

Dr. Walker.—I wish to understand whether we should drive a horse or not. I am interested in a driving school on the West Side and would like you to tell me to-night whether you think he should not be ridden under saddle. I think in order to make a complete examination you should not only drive a horse but ride him.

Dr. Ryan.—Do you consider side-pulling or tongue-lolling a disease?

Dr. Hawley.—In bringing up the question of soundness or unsoundness, it must be viewed from two points. One is the practical side and the other is the theoretical, and before going any farther I would like to ask this association if it has decided on what is an unsoundness. I think it is impossible to discuss it unless you give a definition.

Dr. Walker.—We have not arrived at that condition. It was considered that a committee would take that up farther along and then get the sentiments of the members here and find out what they considered sound or unsound.

Dr. Hawley.—In my opinion a horse may be technically unsound but practically sound or serviceably sound. A bare spot is an unsoundness, it is abnormal. A bad habit is an unsoundness; a kicker and balker is an unsoundness; a cribber for all practical purposes is sound. It is a habit, not a disease. My definition is this: That any blemish or defect which injures the usefulness or selling price is an unsoundness. Dr. Worms said in his paper that if three-fourths of an inch of the tongue of a horse is removed he will retain the food in his mouth. Technically that horse is unsound, because a part of his tongue is gone; practically he is sound. He can eat and is in good condition, and would sell for just as much money as if he had the tongue. He says that tongue-lolling is not an unsoundness. It certainly is an unsoundness, not a disease. There is no man who drives a tongue-loller through the street that cares for appearances. Nasal cysts he would not consider an unsoundness, but he says in his definition they are an abnormality. I would like to know if a nasal cyst is not an abnormality. It is an abscess, and contains pus, and if large enough would interfere with breathing.

Dr. Quitman.—I would take exception to the remark that tongue-lolling is a habit. It is sometimes a symptom of decayed teeth. I have seen several cases where the decayed tooth was removed and the tongue would be carried normally.

Dr. B. Quitman.—I wish to take an exception to the remark that tongue-lolling is a habit. It may be a disease and the horse cannot put his tongue back into the mouth. Such horses suffer a good deal with parched, dry and cracked tongue. I have an idea it is a disease of the nerves or muscles that control the tongue and I believe it is an unsoundness.

Dr. Walker.—It is quite possible for tongue-lolling to be a habit, as there are tongue-lollers that can be stopped. I have seen tongue-lollers cured by putting two large pieces of leather under their tongue.

Dr. B. Quitman.—That is curing by mechanical means.

Some one interrupted and asked the difference between a habit and vice, to which Dr. Quitman replied that he understood that kicking was a vice in horses. A horse may be sound and be vicious; he is a kicker. Vice is not an unsoundness according to the correct English definition of the word. Such a horse is dangerous and can be rejected according to the law, although you may claim the horse is sound. According to law vice invalidates the sale.

Dr. Walker.—English law is: "Sound, free from vice and a worker."

Dr. Campbell.—Will we accept or reject horses having the disease mentioned if they occur?

Dr. Caspar.—I slightly differ with Dr. Worms in regard to the slight discharge from the nose in horses, as there are a good many horses coming from the country with a slight discharge from the nose which are perfectly sound, and I would not reject them. Dr. Worms says anything which is not normal he would consider unsound. I do not consider it is fair to reject a horse with a temperature of 1.5° that has a slight discharge from the nostril. I see horses every day with a temperature of 102° F. with a slight discharge from the nose and which are in every way sound, and I think it would be a great injustice to the seller to reject them.

Dr. Campbell.—I would like to ask Dr. Caspar if he found a horse with a temperature of two degrees would he pass him?

Dr. Caspar.—We do not take the temperature of animals out there. I still think it an injustice to reject a horse when he is perfectly sound and satisfactory in every respect and satisfactory to the buyer if he has a slight discharge from the nostril and a temperature of 102° F., and I would not reject him. My original argument was 101 or anything above normal and I went to 101.5° or even 102°.

Dr. Worms.—Dr. Caspar is discussing acute catarrh, where you get a temperature of 102°, mucous membrane of the eye injected; then comes the question whether it is acclimation fever or catarrh. In acute catarrh you do not get a purulent discharge. In chronic catarrh you get a purulent, thick mucilaginous discharge, and it is an unsoundness, and I would not pass a horse with that discharge from the nose. A slight running at the nose like you find in ephemeral fever and acute catarrh I do not consider an unsoundness.

Dr. Quitman.—The practical and technical division which Dr. Hawley made is a good one. For instance, I examined a high-priced horse some two or three months ago. He was extraordinarily sound, with the exception that he had a discharge from the nostrils and a temperature of 104°. The owner did not even go to the Yards, but left the matter of the examination for me to decide. After making the examination I telephoned him the horse was sound except for the time being he was sick, but thought that the horse might recover. I told him there was danger in taking the horse from the stable. He asked me if I considered it safe for him to buy the horse. I told him it was safe to buy the horse if he left him there for treatment. In passing a horse for soundness it is well to put it to the common sense of the man for whom you examine the horse. A horse with ephemeral or acclimation fever practically and technically is unsound. In my opinion this is so for the reason that the slightest amount of exercise is apt to make him catch a fresh cold and bring on pneumonia or something else by exhausting him ; at the same time, if the owner takes these chances, I would pass him. I drove the above horse at a temperature of 104°. I told the seller that the horse was sick and examined him at his risk, but at the same time you cannot give a dealer a fair show by passing a horse with a temperature of 104°.

Dr. Walker.—You would not advise us to pass a horse with a temperature of 104°. Answer. No.

Dr. Walker.—Why did you do it? Answer. Because we cannot always go according to law. I wanted to see if he had any lameness. The seller told me to hitch him up and wind him. Several made objections to the winding of a horse with a temperature of 104°.

Dr. Hawley.—Horses are sold at the Stock Yards every day with a temperature ranging from 101° to 104°. They are hitched up and winded time and again and come out all right.

Dr. B. Quitman.—Horse dealers and veterinarians should look out for themselves. Some horses will retain their appetite even though they be very sick. I would not pass a horse with a discharge from his nose, because it may subside within a few days or lead on to something serious.

Dr. Worms.—I wish to take exception to the remark about tongue-lolling, and I consider a veterinarian is very careless in making an examination if he does not drive a horse. Of course if a man is examining a truck horse it is a different thing. I never examine a driving horse but what I ride behind him. I think a veterinarian is making an extremely careless examination if he does not drive a horse to discover whether he is a tongue-loller or side-puller, and if either conditions were present to tell the buyer and let him decide whether he wanted him or not.

Dr. Quitman.—It is very seldom when called upon to examine a horse that you will get to drive him ; in fact, the party who buys him may drive him and not discover he is a tongue-loller. It is very hard to find whether a horse is a side-puller or tongue-loller unless you drive him. You may examine such a horse and say he is all right if you do not drive him.

Dr. James Robertson now read a paper on "Observations on the Face in Examination for Soundness," as follows :

As the horse is gifted with the power to think, to reason about things and objects of his own sphere, to recognize facts of his experience and memory, it must be evident to every one that any examination as to soundness would be incomplete without a careful consideration of his mental endowments. These qualifications we may learn largely through a study of the expressions of the face. The parts most particularly charged with the manifestations of the internal states of the animal are the eyes and the eyelids, the ears, the nostrils, the lips and the mouth. These organs by the different attitudes they assume, dejected by turns, gentlenesss, vivacity, anger, sadness, joy, pain, fear, courage, ferocity, indifference and stupidity. The importance of the mental make up of a horse becomes manifest when we consider the very close relationship existing between many of these mental conditions and pathological conditions that are influenced by them.

Excessive fear and ferocity if chronic is generally accompanied by disturbances of some or all of the vital, digestive, secretive or excretive organs. Fright prepares the way for disease by undermining the nervous forces and weakening resistance and the consequences of excessive anger or viciousness we all know results in the disturbance of every faculty and function. The action of the heart is seriously impaired, digestive processes are instantly checked and do not proceed until the natural circulation of the blood is restored. Where there were mental aberrations that in my judgment would interere with his health or usefulness, I would declare the horse unsound. Osteo-porosis, enlarged superior or inferior maxillary bones and fractures interfering with function I would consider unsound.

Dr. E. L. Quitman.—If Dr. Robertson takes into consideration the psychic condition and facial expression of animals, I would like to ask what guide he would have in examining mules?

Dr. Robertson.—I am somewhat surprised that a veterinarian should ask the question who has to depend so largely on his knowledge of the animal from what he can see and find out of the pathology. There is no veterinarian who pretends to diagnose a case on the thermometer and pulse and treat the case. There is a psychological condition that can be applied to animals. Some say they have a soul and others they have not. There is an expression in all animals by which we can tell to a certain extent the things that are passing through their minds, and I am surprised that a veterinarian should ask how this could be applied to a mule. It has been my misfortune not to be much associated with mules, and therefore I have not been able to study their physiognomy. When you consider the number of strange horses that are led into the ordinary blacksmith shop, it is astounding why you never hear of a horse-shoer being kicked. It is because the horse-shoer knows pretty well how to behave himself around certain horses, and we all know the disposition of a horse the more we are associated with him. Veterinarians who are careless and rough seldom meet with success in the treatment of horses on account of their actions. I know a man who is careless and rough in the handling and treatment of horses, and I have seen horses become extremely nervous on account of it, and I contend that this psychological condition should be carefully observed. I do not pretend to be a physiognomist and to read expressions, but every horse has a general expression that leads us to be careful in going around him. I, for instance, now recall the case where a horse will drive double under ordinary circumstances for 15 or 20 miles, but if you take him and hitch him into a top buggy you cannot drive him over a mile. The reason is that one day when he was hitched the top buggy caught in a hook and he became frightened.

Dr. Quitman related the story of a pleasant mule which was very vicious when meddled with.

Dr. Hawley.—Does Dr. Robertson mean to say that an animal can be psychologically unsound?

Dr. Robertson.—Yes, sir. I consider that a horse can be psychologically unsound. The line is well drawn. A horse that is a dummy and his brain is not in proper working order is unsound, and the line of demarcation is well marked. I have tried to show the connection with the mind and the work of the animal. I think the connection is very close. A man may be sound in body, but in mind he may have a paresis. I think it is as necessary that a horse have a sound mind and body, and we must take note of the horse's mind. Excessive viciousness I regard as an unsoundness. We must take everything into consideration that protects the physiological combination. A horse must have a sound body and mind. I have rejected several horses on that account.

The next order of business being new business, it was moved by Dr. Nelson, seconded by Dr. Ryan that a reconsideration of the vote taken at the last meeting in regard to the expulsion of Drs. Pierce and McGraw, be held, a standing vote being taken. On count it was ascertained that eleven members desired reconsideration, while five did not. The vote being two-thirds affirmative, a new vote on expulston will be held at the next regular meeting. Owing to a spirited discussion as to members voting who had not paid their dues, it was held by the President that a delinquent member could not vote. Motion for appeal was taken to this ruling by Dr. E. L. Quitman, seconded by Dr. Dubia. Voted and carried. The President stated that in making this ruling he was only living up to the by-laws of the society, as appears in Article IV, section 1 and 3, and that the appeal taken was not from the President but from the society's own by-laws. That unless these by-laws were lived up to and enforced by the members, that he should tender his resignation. This was followed by a withdrawal of Dr. Quitman's motion by Dr. Quitman, with the hope that the seconder would also withdraw his second to the motion, which was not done. On motion adjournment.

L. CAMPBELL, D. V. S., *Vice-President and Secretary.*

IOWA STATE VETERINARY MEDICAL ASSOCIATION.

The tenth annual meeting was called to order in Des Moines at 10 A. M. by President G. A. Johnson. There were present Drs. S. H. Johnson, W. B. Niles, A. A. Peters, F. M. Roys, P. Malcolm, C. E. Stewart, H. L. Stewart, J. G. Parslow, J. I. Gibson, J. W. Griffith, E. A. Buxton, J. A. Campbell, A. T. Peters, H. McLeod, P. O. Koto, W. F. Lazear, A. S. Brodie, G. A. Johnson, G. A. Scott, H. E. Talbot, J. L. Williamson, W. H. Austin, D. H. Miller, G. M. Walrod, C. J. Hinkley, R. A. Craig and J. E. Brown.

Minutes of previous meeting were read and approved.

Dr. G. A. Scott was appointed to fill vacancy on Board of Censors.

The President's address was delivered and discussions followed.

Reading of correspondence was next in order, and letters from Drs. L. A. Thomas, E. Besser, W. L. Williams, Dr. W. A. Heck and many others were read.

Dr. Gibson moved that as Dr. L. A. Thomas had been at considerable expense as a member of the Legislative Committee, and had been a creditable member of our association before taking up the medical profession, that his dues be credited up in full and he be made an honorary member. Seconded and carried.

The resignation of Dr. W. A. Heck was accepted, and he was made an honorary member so long as he remained a non-resident of the State.

The Treasurer's report, showing all debts paid and a balance of $10.48 on hand, was read and referred to an auditing committee. The President appointed as auditing committee Drs. W. H. Austin, C. E. Stewart and C. J. Hinkley.

The Secretary's report was read, and discussions followed on tuberculin and tuberculin tests, mallein and mallein tests, advisability of making an effort to place veterinarians on the programme of farmers' institute and stock meetings, as a means of educating the farmers and advancing the interests of the profession in the State.

The Board of Censors reported favorably on the applications for membership of Drs. G. P. Statter, E. A. Buxton, A. L. Brodie, R. A. Craig, F. M. Roys, and the same were duly elected to membership.

Dr. A. T. Peters, of Lincoln, Neb., was present and extended an invitation to the members of the I. S. V. M. A. to be present at the meeting of the Nebraska Association on Jan. 18, 1898.

Dr. J. I. Gibson, State Veterinary Surgeon of Iowa, announced that his annual report had been printed, and that he would send any one a copy who desired it.

Meeting adjourned until 1.30 P. M.

Afternoon Session.—Meeting called to order by President Johnson.

Report of Committee on Disease and New Treatment, was made by Dr. W. B. Niles, Chairman. Discussions followed on subjects referred to in the report. Corn-stalk disease was discussed at considerable length.

Cases of peculiar interest were reported by Drs. Gibson and Austin, of an outbreak of infectious catarrhal disease in cattle.

Dr. Koto reported a case where a piece of glass was removed from the under side of a mare's tail, supposed to have entered the body by way of the mouth and stomach.

Dr. Peters reported a case where a whip stalk had been substituted for a probang to relieve choking in a cow; it was broken, and a piece went down into the stomach; some two years later an abscess formed in the flank, and on being opened the piece was found and removed.

Dr. Brown reported a case where a sharp-pointed, headless nail had been swallowed by a cow with the food, and passed from the stomach through the diaphragm to the heart.

Several other cases of a similar interesting nature were reported by Drs. Campbell, Walrod, Austin, Gibson, Miller and others.

Report of Committee on Articles for Newspaper Publication was made by Dr. W. B. Niles, Chairman.

Report of the Auditing Committee stated that the Treasurer's accounts had been examined and found correct. Report was adopted and committee discharged.

Regarding papers by veterinarians at institutes, etc., Dr. Gibson moved that Dr. Niles be made a committee to assign papers, or subjects, and essayists as suggested in the Secretary's report. Seconded and carried.

Dr. Gibson offered a resolution referring to the U. S. V. M. A. meeting at Omaha.

Dr. Brown moved that a committee of three be appointed by the chair on resolutions, and that this resolution be referred to them. Seconded and carried. Chair appointed as Committee on Resolutions Drs. W. B. Niles, S. H. Johnson and J. H. McLeod. The chair was authorized to appoint a committee to investigate the printing of the report of the meeting and to report at a later session. Chair appointed Drs. Brown, Niles and Gibson.

Dr. S. H. Johnson moved that two delegates be elected by ballot to represent this association at the meeting of the U. S. V. M. A. Seconded and carried.

Meeting adjourned until 7.30 P. M.

Evening Session.—Joint meeting of I. S. V. M. A. and Iowa Agricultural Society was called to order by President Johnson, at 7.45 P. M.

Dr. J. I Gibson was introduced and read a paper on the subject of "Actinomycosis."

Dr. A. T. Peters, of Lincoln, Neb., read a paper on "Immunity." After the reading of this paper, a large number of very fine stereopticon views illustrating the two papers were thrown upon the canvas, and were greatly enjoyed by all present.

Discussions were indulged in for only a short time until President Jno. Cownie, of the State Agricultural Society, arose and extended a most cordial invitation to the members to attend their banquet.

Dr. Gibson moved to accept the invitation; seconded and carried.

Adjourned until next morning at 9.30.

Morning Session, Second Day, January 13.—Meeting called to order by President Johnson at 9.30 A. M.

Discussion on Dr. Peters' and Dr. Gibson's papers was taken up, and ran along the line principally of preparing serum, hog cholera, treatment, etc.

Dr. J. G. Parslow was then introduced and read a paper on the subject of "Reflex Paralysis; or, Paralysis from Indigestion,"* after which discussions followed.

Dr. J. W. Griffith was called and read a paper entitled "Dairy Sanitation," and discussions followed.

Dr. J. H. McLeod then read a paper entitled "Notes from Case Book." Discussions followed on umbilical hernias, and methods of operation for same.

Dr. Emmert, member of the State Board of Health, and State Senator-elect, being present, was introduced and spoke on the prevalence of tuberculosis in the State, and of its spread through importation of Eastern dairy cattle into Iowa. The doctor outlined a bill which he proposed to introduce in the State Legislature, that would require that all cattle shipped into the State should be accompanied with a certificate of tuberculin test. Discussions followed by quite a number of the members, and the hearty coöperation of the association was pledged. Dr. Emmert also spoke of a bill intended to prevent the spread of hog cholera, by strict quarantine measures, which he would probably introduce.

Adjournment was then made until 4 P. M., so the members could attend the inaugural exercises of Governor-elect Shaw.

Afternoon Session, January 13.—Meeting called to order at 4 P. M. by President Johnson.

Dr. S. H. Johnson read a paper on the subject, "Removal of Clitoris to Cure Viciousness," which went to show that the operation had been followed by very satisfactory results in several cases. Discussions followed on the operation and its results; also on the operation of ovariotomy.

Discussions closed and the election of officers was made the next order of business, which resulted as follows; President, Dr. S. H. Johnson, Carroll; 1st Vice-President, Dr. G. A. Scott,

---

* Published in February REVIEW.

Independence; 2d Vice-President, Dr. J. G. Parslow, Marshalltown; Secretary and Treasurer, Dr. J. E. Brown, Oskaloosa. Board of Censors, Dr. W. H. Austin, Newton; Dr. D. H. Miller, Harlan; Dr. J. H. McLeod, Charles City. Delegates to U. S. V. M. A. meeting—Dr. P. O. Koto, Forest City; Dr. H. E. Talbot, Des Moines.

The Committee on Printing of Report of Meeting reported that the same might be printed in the State Agricultural Report free of charge to the association and a sufficient number of copies obtained for our members.

On vote the report was received and the Secretary instructed to prepare the notes and papers for publication, and forward them to the Secretary of the State Agricultural Society.

The Committee on Legislation reported through its chairman, Dr. Gibson, which report was received and committee discharged.

Moved by Dr. Niles that the President and Secretary should constitute a committee to voice the sentiment of the association, and coöperate with the State Veterinary Surgeon in legislative matters. Seconded and carried.

The Committee on Resolutions reported the following:

WHEREAS, We learn from Dr. Peters that the meeting of the U. S. V. M. A. will be held in Omaha next September,

Resolved, That we the members of the I. S. V. M. A. rejoice with the Nebraska State Veterinary Medical Association and the veterinarians of the West in the location of the U. S. meeting, and pledge to the Nebraska Association our coöperative action in receiving the members of the United States Association.

Resolved, That we recommend a joint meeting of this association and the Nebraska Association on the first day of the meeting of the United States Association in Omaha.

WHEREAS, Senator Emmert, of the Iowa State Board of Health, has kindly appeared before the Iowa State Veterinary Association for the purpose of explaining proposed legislation, and asking for the coöperation of the society; therefore, be it

Resolved, That the members of the Iowa State Veterinary Association, in convention assembled, express their great appreciation of the interest shown by Dr. Emmert in the live stock industry of the State. and pledge him their hearty support and coöperation in securing the passage of the proposed bill to prevent the introduction of bovine tuberculosis into the State, and other leglislation along sanitary lines.

Resolved, That we extend our sincere thanks to Dr. Peters for the great interest he has taken in our meeting, for the reading of his very able paper on "Immunity," and for the exhibition of the specimen in connection therewith, also, to Dr. Scott for the use of the stereopticon.

Resolved, That the members of the I. S. V. M. A. extend their thanks to the State Agricultural Society for their kind invitation to their annual banquet, and for the general interest they have shown in this meeting.

Resolved, That this association tender its sincere thanks to the management of the Savoy Hotel for the courtesies extended to the association, and for the rooms during the annual meeting.

[Signed.]
W. B. NILES
J. H. MCLEOD } *Committee on Resolutions.*
S. H. JOHNSON

The above resolutions were adopted, and ordered spread upon the minutes.

Dr. J. I. Gibson then read a paper, subject, "General Sanitation," and discussions followed.

Dr. Brown moved that the Committee on Disease and Treatment be continued another year. Motion seconded and carried.

On motion, the meeeting adjonrned to meet at the call of the President and Secretary in Des Moines, next fall or winter.

JNO. E. BROWN, *Secretary.*

CALIFORNIA STATE VETERINARY MEDICAL ASSOCIATION.

The annual meeting was held in the Baldwin Hotel, San Francisco, on December 8th, 1897, at 11 o'clock A. M.

The meeting was called to order by the Secretary, the President and Vice-President both being absent. Upon motion by Dr. Magowan, the meeting adjourned to meet at the hospital of Drs. Pierce and Archibald, of Oakland, at 2 o'clock P. M.

At 2 o'clock P. M., pursuant to adjournment, it met at the hospital of Drs. Pierce and Archibald, and was called to order by the President, Dr. R. A. Archibald. The roll was called, and a fair attendance was present. The minutes of the previous meeting were read approved.

Unfinished Business.—The name of Dr. F. Forrest, of San José, was dropped from the roll of membership for unprofessional conduct and assuming a title to which he had no just claim.

The subject matter of the appointment of a Committee on Diseases was next taken up. Considerable argument was offered on the subject, and upon motion a committee was elected as follows: Dr. R. A. Archibald, of Oakland; Dr. H. A. Spencer, of San José; Dr. C. B. Orvis, of Milton; Dr. R. T. Whittlesey, of Los Angeles; Dr. J. Graham, of Fresno; Dr. G. F. Faulkner, of Salinas, and Dr. D. F. Fox, of Sacramento.

Report of Secretary and Treasurer.—The Secretary's report showed that he had written some 160 letters, had notified all members of the meetings, had sent each member a statement of his standing as regards dues, etc.; had collected during the year $58.80, had a balance on hand of $20.00 of assessments which had been collected the previous year, making a total of $78.80, all of which had been turned over to the Treasurer and a receipt taken therefor. The report was adopted as read.

The Treasurer's report showed that at the beginning of the year he had a balance on hand of $33.70, that he had received during the year $78.80, making a total of $112.50. The disbursements during the year had amounted to $50.00, leaving a balance on hand of $62.50. The report of the Treasurer was adopted as read.

Election of Officers for the ensuing year was next taken up and resulted as follows: President, Dr. R. A. Archibald, of Oakland; Vice-President, Dr. G. F. Faulkner, of Salinas; Secretary, Dr. D. F. Fox, of Sacramento; Treasurer, Dr. C. L. Magowan, of Sacramento. Board of Examiners—Dr. H. A. Spencer, Dr. Thomas Maclay, Dr. F. E. Pierce, Dr. A. M. M'Cullum, and Dr. J. Graham.

New Business—Dr. Pierce introduced the subject of a location of an experiment station on the Pacific Coast. Considerable discussion followed, and it was the general sense of the association that it would be of great benefit to the profession in this State.

Dr. Magowan spoke of the advisability of the association prosecuting men who are practicing veterinary medicine contrary to the law regulating the practice of veterinary medicine and surgery in this State. After considerable discussion the matter was laid over until the next meeting.

Upon motion of Dr. H. A. Spencer, the students of the Veterinary Department of the University of California were extended a standing invitation to be present at any or all of the meetings of this association.

At 5 o'clock P. M. the meeting adjourned for dinner.

Upon the kind invitation of Dr. F. E. Pierce, the members assembled at his residence, where the spacious dining room was beautifully decorated with a profusion of flowers and the table richly spread with all the delicacies of the season, and all present enjoyed the kind hospitalities of the host and hostess for an hour or more beyond expression.

At 8 o'clock P. M. the meeting re-convened; among the visitors present were Dr. H. N. Rowell, Health Officer of the city of Berkley; Dr. H. N. Rucker, President of the Oakland Board of Health, and Dr. J. T. Kitchings, member of the Oakland Board of Health, and a few of the students of the Vet. Dept. of the University of California.

President Dr. R. A. Archibald called Dr. H. A. Spencer to the chair and proceeded ro read a most excellent and well prepared paper on the subject of "Tuberculin and the Manner in which it Acts as a Diagnostic Agent."

The paper was well presented and was thoroughly dealt with in the discussion which followed.

Dr. H. A. Spencer followed with an excellent selection of stereopticon views, which he exhibited for an hour or more to the utmost satisfaction of those present, and upon conclusion was most highly complimented for the manner in which he had entertained us.

It now being after 11 o'clock, the members of the Health Department of Oakland and Berkley were obliged to take their departure, but before doing so a recess was declared and all present were shown to the dining room of Dr. Archibald, where an elaborate feast had been prepared, and the kind hospitalities of Dr. and Mrs. Archibald will long be remembered by those who were fortunate enough to be there.

After the meeting had re-convened Dr. F. E. Pierce came forward with a most excellent paper on the subject of "Influenza." The doctor described in detail the different forms of the disease and quoted a number of other diseases which were termed influenza that deserved better classification. Quite a long and interesting discussion followed, in which nearly all present took an active part.

Essayists for the next meeting were appointed as follows:—Dr. G. F. Faulkner, of Salinas; Dr. H. F. Spencer, of San José, and Dr. J. H. Eddy, of Stockton.

Dr. Fox moved and Dr. Spencer seconded that the thanks of this association be tendered Drs. Pierce and Archibald, and their wives, for the splendid manner in which they had entertained us during the meeting. Carried unanimously and it was so ordered.

There being no further business before the meeting, it adjourned to meet at the Baldwin Hotel, San Francisco, Cal., on Wednesday, March 9, 1898.

D. F. Fox, *Secretary.*

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The regular monthly meeting of the Veterinary Medical Association of New York County was called to order at 8.30 o'clock, Wednesday evening, February 2d, at the Academy of Medicine, with the President, Dr. Huidekoper, presiding. The following members answered the roll call: Drs. Bell, C. C. Cattanach, J. S. Cattanach, J. S. Cattanach, Jr., Dickson, Delaney, Ellis, Farley, Gill, Huidekoper, Hanson, Neher, O'Shea, Ryder, and Sherwood (15). There were also present as visitors Dr.

Grenside, of New York; Drs. Ackerman and Goubeaud, of Brooklyn; Dr. Nicholas, of Mt. Vernon, and Messrs. English, Fretz, Fox and Sandford, students from the A. V. C.

Moved and seconded, that guests be given the privilege of the floor in debate. Carried.

Report of Judiciary Committee.—Dr. O'Shea, Chairman, reported that the jury exemption bill was introduced in the Senate by Mr. Sullivan, January 5th, and referred to the Codes Committee, the same having been introduced in the Assembly by Mr. Sullivan January 2 and referred to Codes Committee. The committee called the Civil Service Commission's attention to the law regarding the practice of veterinary medicine in New York State, and he promises if presented in writing he will see that the Commission follow the spirit of the law regarding examinations for meat and milk inspectors. The Judiciary Committee is looking up illegal practitioners, and just as soon as sufficient evidence can be obtained they will be prosecuted. Moved and seconded, that the report be accepted. Carried.

Report of Committee on Ways and Means.—Dr. Bell, Chairman, stated that this committee is making arrangements for the five remaining meetings of the year, and have arrangements for the March meeting about completed. Moved and seconded that the report be accepted. Carried.

Reading of Papers.—Dr. Neher read a carefully prepared paper on "Development of Bone, showing under the Microscope the Ossification Zones or Centres."

Following this Dr. Bell read a very interesting and practical paper on "Rubber Shoes for City Horses," which was freely discussed by the members present.

During the reading of Dr. Bell's paper, Dr. Neher was setting up his microscope, to which the members had free access during the rest of the evening.

Applications for Membership.—Applications for membership in the association were filed by Drs. Ackerman and Grenside. Applications referred to the Board of Censors. Moved and seconded, that a recess of twenty minutes be taken while the Board act upon the applications. Carried. Board of Censors favorably recommended Dr. Ackerman and Grenside, and they were declared members of the association.

New Business.—Moved and seconded that the Judiciary Committee formulate a letter, to be signed by the President and Secretary of the association, to be sent to the President of the Civil Service Commission. Carried.

Moved and seconded, that a vote of thanks be extended to Drs. Neher and Bell for their papers. Carried.

Moved and seconded, that the meeting adjourn. Carried.

ROBT. W. ELLIS, D.V.S., *Secretary.*

VETERINARY MEDICAL SOCIETY OF THE UNIVERSITY OF PENNSYLVANIA.

The meetings held during the month of January were of special interest, as the subjects for debate and for the papers to be read were well selected, and all the members seemed to be working with a common effort to bring every part up to the standard. The money taken in by the Treasurer during the last meeting amounted to eight dollars and fifty cents. Mr. Stehle's name was proposed and duly elected a member of this society.

One of the most important changes in the society was the election of new officers, which resulted as follows: Honorary President, Prof. John W. Adams (he was unanimously elected to succeed Prof. R. S. Huidekoper); President, J. E. Spindler; Vice-President, G. Chesley; Treasurer, S. Blount; Librarian, E. Newcomer. Executive Committee—S. McClure, '98; H. Hoopes, '99; J. P. Miller, '99; E. Cornman, '00.

Some of the interesting and instructive papers read to the society were: "Etiology of Epizootic Abortion," by Prof. S. J. J. Harger. He traced the full course of the disease, and the members present were greatly benefitted by the paper.

Mr. E. Newcomer presented the society with an excellent paper. He traced the horse from its first knowledge in history until the present time. He showed some of the important changes that have taken place in the equine family, the most important of which was the great development of speed. The paper was highly appreciated by the members present.

Mr. Hoopes read a very interesting article on "What Parts Have the Arabian, Turk and Barbary Horses Played in the Foundation of the Racing Breeds of Horses?" Mr. Hoopes thought that subjects of this class were very important for the veterinary student to be well versed upon, as in after life he will constantly come across instances in which he will be called upon to discuss this question, *e. g.*, if called upon to speak at some institute, or grangers' meeting, such a subject if well delivered would receive the highest applause.

The subjects for debate during this month's meetings were as follows: "*Resolved*, That veterinarians should be active members of humane societies." Affirmative, Messrs. McGerry, Taylor and White. Negative, Messrs. Murphy, Miller and Beaver. The Judges, Messrs. Kirby, Newcomer and Hughes, decided in favor of the negative.

"*Resolved*, That the United States Government should give the veterinarian in the United States Army the rank and pay of Second Lieutenant." Affirmative, Messrs. Spaethe, Jacobs and Nolan. Negative, Messrs. Murphy, Townsend and Reardon.

Mr. Spindler made a report in behalf of the supper committee, having paid for the supper and received a receipt in full. It was moved and seconded to offer a vote of thanks to the committee.

It was also moved and seconded to offer a vote of thanks to the outgoing officers.

The society adjourned at 10:15 P. M.

M. JACOB, *Secretary.*

VETERINARY MEDICAL SOCIETY OF THE ONTARIO VETERINARY COLLEGE.

The regular weekly meetings of the society were very interesting during the past month. The papers were well written and many valuable points were brought forward during the discussions. As every student is required to be with a practitioner during the summer vacation the methods of many eminent veterinarians are in this way communicated to the students. They therefore find the meetings of great value in obtaining both theoretical and practical knowledge. The following is a list of the papers read:

Essays.—P. L. C. Gauntt, "Chloroform as an Anæsthetic"; J. S. McIntyre, "Ovariotomy in Cow"; L. Bailey, "Nasal Gleet in Sheep"; A. G. Van Tine, "Abortion"; E. H. Lawley, "Anthrax"; J. G. Cruikshanks, "Indigestion in Horse"; H. P. Reed, "Sanitas"; B. W. Powell, "Modes of Death"; C. H. A. Stevanosn, "Open Joint"; W. A. Campbell, "Periodic Ophthalmia"; J. Dixon, "Aconite"; W. R. Clark, "Means of Arresting Hæmorrhage"; A. H. Kaull, "Influenza"; W. G. Hyett, "Pulmonary Emphysema"; A. P. Lubach, "Pleuro-pneunomia"; D. Allen, "Potassium Bromide".

Communications.—A. D. McLachlin, "Rumenotomy"; A. Jordan, "Fracture of Premaxilla"; E. C. Elwes, "Canker in Foot"; L. T. Dunn, "Myorrhexis"; C. W. Fisher, "Phymosis in Bear"; E. T. Cunningham, "Rupture of Stomach"; Hamlet Moore, "Azoturia"; H. W. Stedman, "Puncture of

Foot"; F. M. Hayward, "Capped Elbow"; G. P. Hayter, "Prolapsus Ani"; G. W. Higginson, "Foreign Body in Posterior Femoral Region"; B. Royer, "Tympanites in Ox"; A. I. Sorenesen, "Mammitis in Sow"; W. L. Adams, "Choking"; T. Rowland, "Tympanites in Ox"; W. R. Clark, "Acute Laminitis." C. W. FISHER, *Secretary.*

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The February meeting of the Keystone Veterinary Medical Association was held on the 8th inst., Dr. Thomas B. Rayner presiding, as both the President and Vice-President were absent. But few members responded to roll-call, those present being Drs. W. H. Hoskins, W. S. Kooker, W. L. Rhoads, T. B. Rayner, C. J. Marshall and A. W. Lushington. Our list of visitors was also short at this meeting, there being but three or four present.

After the regular routine of business and discussion of the resolutions offered at the previous meeting to make the payment of $5 initiation fee cover the dues to the succeeding annual meeting, which was unanimously adopted, Drs. Marshall and Houldsworth made a report at some length upon the extent to which dairies were under veterinary sanitary supervision.

Dr. Hoskins made a report upon the disturbance now in progress with the Board of Health upon the method of serving milk. Dr. Rayner appointed Dr. Pearson as an active member of the committee to keep in touch with this movement.

Dr. C. J. Marshall now read an interesting paper on the better methods of handling milk.

Notice was given of the annual meeting of the Pennsylvania State Veterinary Medical Association, to be held in Philadelphia, March 8th and 9th.

The meeting adjourned till March 8th, when it will convene in conjunction with the State Association.

DR. W. L. RHOADS, *Secretary.*

PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.

We are advised by Secretary W. L. Rhoads that the annual meeting will be held in Philadelphia, March 8 and 9. The local committee of arrangements consists of Drs. W. S. Kooker, Robert Gladfelter, Charles Williams, Walter L. Hart, J. D. Houedsworth, and C. J. Marshall.

The programme as far as arranged is as follows:

March 8—Routine business and election of officers 10 to

12.30; 12.30 till 2 P. M., lunch; 2 till 4, surgical operations; 4 to 6, reports; 6 to 7, recess; 7 to 8, illustrated lecture with lantern slides by Dr. Ravenel on "General Bacteriology"; 3.30 to ——, banquet to members and guests by Dr. Pearson.

March 9—Regular business, beginning at 10 A. M. sharp. Papers—Dr. Jno. W. Adams (subject not stated); Dr. M. E. Conard, "What Our Dairy Cattle Inherit"; Dr. Frances Bridge (subject not stated); Dr. H. B. Felton, "Pasteurization versus Purity"; Dr. J. F. Butterfield, "Report of a Case of Distressed Breathing in a Cow"; Dr. H. P. Kelly, "Eversion of the Uterus in Cows"; Dr. J. C. Michener, "Feeding Animals"; Dr. C. J. Marshall, "What a Veterinarian Should Know about Milk"; Dr. Chas. Bland (subject not stated); Dr. Ravenel, "The Milk Supply from a Bacteriological Standpoint."

Applications for membership have been received from Morris W. Keck, V. S., Slatington; A. W. Lushington, V. M. D., Philadelphia; and Geo. W. Shaw, V. M. D., University of Pennsylvania (Veterinary Department).

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

President Salmon announces the appointment of the following Committee of Arrangements for the Omaha meeting: Dr. A. T. Peters (Chairman), Lincoln, Neb.; Dr. H. L. Ramacciotti, Omaha, Neb.; Dr. John Hall, Falls City, Neb. This committee has in a measure outlined plans for entertainment, and no efforts will be spared to make the occasion one of comfort and pleasure to all who attend.

Secretary Stewart requests us to ask all who expect to present papers at Omaha to notify him promptly of such intention.

The feeling among Western veterinarians is very hopeful. The rapid advance in the value of horses has materially increased their business, a circumstance which will render it possible for a large number of them to attend the coming meeting.

The veterinarians of Nebraska and Iowa are a unit in their desire to make the Omaha convention superior in every sense to all predecessors.

While the important subject in the State medicine section of tuberculosis will command its usual prominence, we would suggest that it does not this year become so to the exclusion of all others. Meat inspection is becoming such a factor in the veterinarian's calling that more prominence should be given to it by the National Association, and we have no doubt but that it will be made a leading topic of discussion—to the end that resolutions bearing upon its national and municipal necessity will be passed, with strong demands for an extension of the service.

MASSACHUSETTS VETERINARY ASSOCIATION.

The regular monthly meeting was held at No. 19 Boylston Place, December 22, 1897. President Winchester in the chair. Members present: Drs. Burchstead, Dyer, Emerson, Frothingham, Lee, Lewis, McLaughlin, Parker, Peters, Pierce, Williams, Winchester, Winslow, Stickney. Dr. J. C. Cutting, of Medford, and Dr. Charles H. Higgins, of Dover, were elected members.

The Legislative Bill was adopted by the association, and President Winchester appointed Drs. McLaughlin, Lee, Frothingham, Pierce, Labaw, Rogers, Cronon and Winchester a committee to take charge of the bill before the legislature.

HENRY S. LEWIS, *Secretary.*

NEWS AND ITEMS.

THERE will be a joint session of the Keystone and Pennsylvania State Veterinary Medical Associations in Philadelphia on March 8th.

W. G. LANGDON has been elected Veterinarian of the North Dakota Agricultural College and Experiment Station to succeed Dr. T. D. Hinebaugh.

DIRECTOR D. MCEACHRAN, of the Veterinary Department of McGill University, is on a trip of scientific observation through England, Denmark, France and Germany.

THERE IS NOTHING SLOW ABOUT IOWA.—The State Board of Health now has a veterinarian for its president.. Dr. J. I. Gibson, State Veterinary Surgeon, is the man who fills that honorable position.

THE course of lectures on practical bacteriology held by Dr. Roux at the Pasteur Institute last two months, is so well attended that one must make application two years ahead before he can be admitted.

THE value of all the live stock in the country on January 1, 1897, was estimated to be $1,886,959,000. On January 1, 1898, it was estimated at $2,037,012,000, showing an increase in value in one year of $150,053,000.

DIRECTORS MCEACHRAN AND LIAUTARD recently inspected the Pasteur Institute and the Alfort School, where Director Trasbot received them and showed them the arrangements of one of the best veterinary institutions on the Continent.

A CHICAGO MAN has made a steam bath cabinet for horses and expects to open up a horse Turkish and Russian bath establishment at the Harlem race track. It is offered as a substitute for "dope" and the electric battery in removing stiffness and soreness.

DR. NILES RECOVERING.—The many friends of Dr. W. B. Niles, of the Veterinary Department of the Iowa Agricultural College, will be pleased to learn that he is now convalescing from an attack of septicæmia, from which he was, for a time, very seriously ill.

"STAR POINTER" FOR EUROPE.—It is announced that James A. Murphy will take Star Pointer and Guinette (one of the most promising candidates for record honors next season) to the Continent next fall and give Europeans a view of a high-class side-wheeler.

GOVERNOR L. M. SHAW, of Iowa, has announced the reappointment of Dr. J. I. Gibson as State Veterinary Surgeon, almost a year before his present term expires. This is *prima-facie* evidence of the satisfactory manner in which the business of that department has been conducted.

D. P. FRAME, M. D. C., of Colorado Springs, who has held the position of Food Inspector for that city for some time, and who is Secretary of the Colorado State Veterinary Medical Association, has received an appointment under the Bureau of Animal Industry, and assigned to duty at Kansas City.

REINDEER FOR ALASKA.—The United States Government has an importation of 530 reindeer now on the Atlantic *en route* for New York. They were purchased in Norway by Lieut. Devore, of the War Department, and are to be sent to Alaska. Five hundred tons of Iceland moss are aboard the vessel to be used as food for them.

SMALL PERCENTAGE OF LOSS IN SHIPPING CATTLE TO EUROPE.—Shipping live cattle across the Atlantic is attended with comparatively small loss nowadays. During 1897 one of the large steamship lines took 40,725 head from Boston and the loss is reported at only twenty-eight head. Better ventilation between decks in hot weather is about the only improvement that is now needed on the steamers.

THE BONES OF GEORGE WILKES.—Recently Col. W. L. Simmons, of Lexington, Ky., who owned the great stallion George Wilkes, and on whose farm he was buried, had his grave opened. Examination showed the bones to be in a perfect state of preservation, and they were exhumed and are now being mounted. When this work is finished the skeleton of the horse will be given to the Kentucky State College.

ACCORDING to the *Journal* (England), a home of rest is going to be created in London for horses, similar to the one already existing for dogs. The principal object will be to build an hospital for the convalescence and rest of lame or overworked animals. In other words, a large veterinary hospital. It is rumored that the Society for the Prevention of Cruelty to Animals is the instigator of the idea.

AT a supper among veterinarians, where horse meat formed the exclusive dish, an invited guest, feeling unwell, addressed his neighbor, a veterinarian, and said: "It is queer; I feel something working in me." "It is the horse that is trotting," answered the vet, and then, "Oh, no, he now gallops, he runs away," he added, when he saw the sick man leave the table to go outside and relieve his too sensitive stomach.—(*Semaine Veterin.*).

FEEDING MILLET TO HORSES.—Dr. T. D. Hinebauch, State Veterinary of North Dakota, has been experimenting with millet, and from his experiments and observations the author draws the following conclusions: Feeding millet alone as coarse fodder is injurious to horses. It produces an increased action of the kidneys and causes lameness and swelling of the joints. It causes an infusion of blood into the joints and destroys the texture of the bone, rendering it soft and less tenacious, so that the ligaments and muscles are easily torn loose. The experience of many farmers confirms the experiments.

HORSES GETTING HIGH.—The special sales of harness horses, says the *Gazette* of February 2, held last week at Chicago and East St. Louis demonstrate conclusively the strength of the market for horses of the right sort. Coachers and high-steppers are in the keenest demand. The top price of the two sales—$1650, bid by a London dealer for a particularly high actor in the Sloan, Nims & Bratton sale at East St. Louis—indicates to what lengths the foreigners will go when their fancy is suited. New dealers are arriving with ample commissions, and the tone is very strong with the keenest of competition, domestic buyers having waked up and gone after the kind that the foreigners are taking. It is a fact that New York for the first time in years is obliged to take a back seat in the buying. It is no longer profitable to purchase on this market for reselling in the East, as prices here are too high. Foreigners took the bulk of the best offerings at both the special sales mentioned.

FEEDING HORSE MEAT TO POLITICIANS.—The versatile veterinarian, William H. Pendry, who is as much of a military man as he is a veterinarian, and as clever a politician as he is a military man and veterinarian, is nothing if not original. He recently entertained the members of his Brooklyn political club at a beefsteak supper, and after all had eaten heartily, the information got abroad that the repast had consisted of a lame but healthy gelding, which the doctor had secured from one of his clients for the occasion. Most of the guests took the deception good-naturedly, and those who found objection are said to have been the most hearty eaters of what was pronounced excellent beefsteak.

TUBERCULOSIS NOT HEREDITARY.—As a result of tests made with a herd of tuberculous cattle, beginning two years ago, Professor Russell, of the Wisconsin Experiment Station, asserts that tuberculosis is not hereditary in cattle and that under proper isolation infected cows may be used for breeding purposes. Further experiments will be made in this line. The herd was tested two years ago last month and more than half was found diseased. The infected cattle were isolated and no further cases have been developed in those which were not diseased at the time of the test. The calves from the tuberculous cows are free from the disease. We are glad that scientists are coming to take a saner view of this matter. Heretofore about all that we have heard on the subject has been "kill, kill," whenever the animal reacted to a "dose" of tuberculin. The day of the extremists with the tuberculin test is passing. There is such a thing as protection to public health—and all favor it. There is also such a thing as wanton destruction of property that is the result of years of skillful breeding and that cannot be replaced as one replenishes a stock of lumber or pig-iron—and sensible men are now joining in protest against it. It is well that the scientists are finally getting on this side of the fence.—(*Breeder's Gazette.*)

CONCERNING ESSENTIAL OILS AND SOME OF THEIR USES.—We read recently in a book by Dr. Gordon Stables, entitled

"A Guide to Health and Disinfection," that "Sanitas" disinfecting fluid was an excellent preparation for use in the bath, and the Doctor concludes his remarks by saying: "Surely King David used a similar bath to enable him to walk through pestilence unscathed." We do not suppose that the Doctor meant to state absolutely that this eminent king used "Sanitas" as we find it on the market to-day, but it is quite possible that during his lifetime he may have absorbed considerable quantities of the active principles that the "Sanitas" preparations contain, and have been benefitted thereby, for they are prepared in strict imitation of nature's process of converting the essential oils given off from the balsams, the pines, the eucalyptus trees, etc., into such oxidized compounds that they bring to the system oxygen in a form that can be freed as peroxide of hydrogen. Possibly had the concentrated product as prepared by the Sanitas Co., Limited, been available and used by the said king, he might have lived longer. The Sanitas preparations are extensively used by veterinary surgeons not only for dressing wounds, etc., but in the treatment of many diseases, and A. J. Sewell, M. R. C. V. S., writes of the satisfactory treatment obtained from the use of "Sanitas" disinfecting fluid in cases of canker of the ear and skin diseases; and from "Sanitas" oil in the treatment of follicular mange. They also manufacture an excellent preparation for use in kennels known as "Sanitas" disinfecting sawdust. Write them at No. 636 West 55th Street, New York City, for a copy of their book, "How to Disinfect," which is full of useful information.

GERMANY DOESN'T LIKE THE COMPETITION OF AMERICAN HORSES.—The Prussian Minister of Agriculture announced last week that horses from this country develop influenza after importation, and stated that if importations increase he will be forced to adopt suitable quarantine protection. This announcement meets with very vigorous response in Washington. Secretary Wilson says that the statements of the Prussian Minister are unwarranted, and Dr. Salmon, Chief of the Bureau of Animal Industry, declares there is no influenza in this country so far as the Department of Agriculture can learn, and that if a horse suffering from the disease were shipped he would either be dead or recovered by the time he landed on German shores, as the duration of the disease is about two weeks, while it takes from two to three weeks for the freight boats to make the transatlantic voyage. Importations are likely to increase, as 224 horses left Chicago alone last week for Germany and the shortage in that country is pronounced. The value of our horses sent to Germany last year was $822,250, which shows the remarkable growth of the trade since 1893, when our exports amounted to $79,950. Germany has recently taken action looking toward a careful examination of fresh fruit imported from America, on the ground that certain fruit diseases are being carried into that country on export goods. Indeed the first order was one of absolute exclusion of both fresh and dried fruit, but the American Ambassador protested so vigorously that the decree was finally modified to admit dried fruits as before and to subject fresh fruits to examination. At Washington the threat of quarantine against our export horses is regarded as a part of the trade war inaugurated against imports into Germany, and the feeling is undoubtedly in favor of very severe retaliatory measures if further interference with the trade is attempted.—(*Breeders' Gazette.*)

ASSISTANTSHIP WANTED.

A qualified veterinarian of fifteen years' experience, desires a position as assistant to city practitioner in the North or West. Address "SOUTHERN VETERINARIAN," care REVIEW

BACK NUMBERS WANTED.

AMERICAN VETERINARY REVIEW, Vol. XVI, Nos. 1, 2, 3, 4, 5, and 6. Address "W. L. R.," office of publication.

BACK NUMBERS REVIEW TO EXCHANGE.

Would like to buy or exchange for any numbers of Vol. XIII. or XIV. excepting Nos. 2, 7 and 8 of Vol. XIV. any of the following: Nos. 5 and 6 of Vol. VI., Nos. 8 or 10 of Vol. X., No. 10 of Vol. XI.

BRYER PENDRY, D. V. S.,
1118 Gates Ave., Brooklyn, N. Y.

POSITION WANTED.

An M. R. C. V. S. (Lond.), 10 years in practice, part of time lecturing, would join V. S. in large city practice with view to succession or would act as locum tenens during absence of V. S. Address ARTHUR BLAKE, Nailsworth, Gloucestershire, England.

FOR SALE.

A substantial and commodious brick veterinary infirmary, office and residence, centrally located in a thrifty city of 25,000, and surrounded by a very rich agricultural and breeding country.

The leading practice of the entire region has for fifteen years been and is still being conducted in this property.

It is offered at less than 60 per cent. of cost, with cash payment sufficient to insure sale, balance at low interest and as long time as may be asked.

An exceptional opportunity for an energetic, up to-date man.

Address W. L. WILLIAMS, Cornell University, Ithaca. N. Y.

VOL. XXI.
NO. 12.

MARCH, 1898.

$3.00 per Annum.
Single Copies, 25 Cents.

AMERICAN VETERINARY REVIEW.

EDITED MONTHLY BY

Prof. A. LIAUTARD, M.D., V.M.,

Foreign Corresponding Member of the Central Society of Veterinary Medicine (Paris),
Honorary Fellow of the Royal College of Veterinary Surgeons (England).

AND

Prof. ROSCOE R. BELL, D.V.S.,

141 WEST 54TH STREET, NEW YORK,

CONTENTS.

PAGE
Editorial.—An Interesting Discussion, 807
Medical Education in the Empire State ... 809
Dangers of Private Slaughter-Houses, 811
Assembly Bill 555 ... 812
Original Articles.—Remarks on the Nature and Differentiation of the Infectious Swine Diseases in the United States. By Veranus A. Moore .. 813
Cerebro-Spinal Meningitis. By W. J. Martin ... 829
The Phonendoscope in Medical and Veterinary Practice. By Prof. A. Vachetti ... 837
Reports of Cases.- General Fatty Degeneration of the Muscular System. By E. L. Volgenau ... 839
Lymphangitis and Hypertrophied Hoof from Calking. By W. L. West, 840
Sanmetto in Canine Cystitis. By G. L. Barnaby ... 841
Removal of the Premaxilla. By J. A. McCrank ... 843
German Review ... 843
Treatment of Chronic Obstipation with Beech-wood Creosote.—A New Treatment for Chronic Lameness of the Shoulder.—Oleum Cannabis as a Galactifuge.—The Value of Hydrastis Canadensis in Bronchial Catarrh.
French Review ... 845
Volvulus in a Horse—Post Mortem Rupture of the Stomach.—Cardial Dilatation with Insufficiency of the Orifices. —Rupture of the Posterior Vena Cava. —The Influence of the Nature of Foreign Body in the Intestinal Obstruction of Dogs.—Hypertrophy of the Prostate and Perineal Hernia of the Bladder in a Dog.—Abnormal Retention of the Fœtus in a Cow.—Purulent Infection Following Chronic Endometritis—Infectious Paraplegia.—Temporary Deafness in the Horse.
English Review ... 849
Neck of Glass Bottle Lodged in Larynx. —Ovarectomy in a Monkey.—Multiple Fracture of the Pelvis.—Glanders in England.—Fractured Rib with Perforation of Thorax in a Cow.
Italian Review ... 851
Abortion in a Cow—Seven Fœtuses.—Stenosis of the Prepuce Resulting from Acrobystitis and Shortness of the Penis in a Horse.—Trauma of the Heart in a Cow.—A Queer Treatment for Indigestion in Cattle.—Sulfuret of Carbone and Bots.
Belgian Review ... 853
Canine Pathology.—Contracture of the Anterior Legs in a Colt.—Torsion of the Mesentery a Cause of Intestinal Obstruction in a Dog.—Laparo Gastrotomy and Extraction of a Foreign Body in a Dog.
Therapeutical Review ... 855
Creosote in Chronic Constipation.—Mixture against Tapeworm.—To Overcome the Tetanic Contractions of the Uterus During Labor.—Barium Chloride in Tympanites of Cattle.—Mixture for Local Anæsthesia.—Treatment of Mange in the Dog.
Obituary ... 856
Samuel E. Queen, V. S.
Career and Direful Fate of Veterinary Surgeon Peas ... 857
Correspondence 859
Veterinary Legislation in New York.
Bibliography ... 862
Society Meetings. ... 864
Chicago Veterinary Society.—Iowa State Veterinary Medical Association.—California State Veterinary Medical Association.—Veterinary Medical Association of New York County.—Veterinary Medical Society of the University of Pennsylvania.—Veterinary Medical Society of the Ontario Veterinary College.—Keystone Veterinary Medical Association.—Pennsylvania State Veterinary Medical Association.—United States Veterinary Medical Association. Massachusetts Veterinary Association.
News and Items ... 893

Communications relating to Publication, subscriptions, complaints or advertisements, should be addressed to the Editors and Publishers.

Post Office Orders should be made *payable to* W. J. COATES, Treasurer AMERICAN VETERINARY REVIEW, 141 W. 54th St., New York, Station G.

The AMERICAN VETERINARY REVIEW is issued on the 1st of each month. *Manuscript and copy for insertion should be received by the 20th of the preceding month* to insure insertion in the next month's number. *Volume commences* with April number.

Publishers, Profs. LIAUTARD and BELL, 141 W. 54th St., New York.

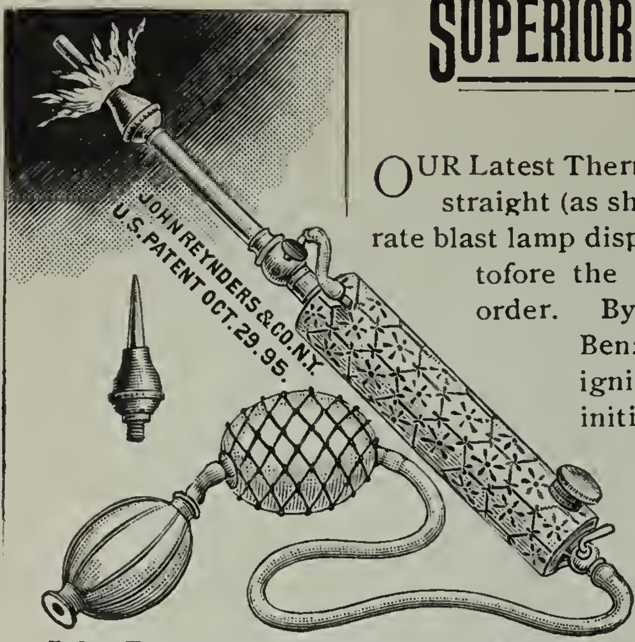
Entered at the Post Office at New York as Second-Class Matter.

CLARK & ZUGALLA, Printers, 33 to 43 Gold Street, N. Y.

JOHN REYNDERS & CO.,

Manufacturers and Importers of

SUPERIOR VETERINARY INSTRUMENTS.


JOHN REYNDERS & CO. N.Y.
U.S. PATENT OCT. 29. 95.

John Reynders & Co's Latest Thermo-Cautery, No. 1.

OUR Latest Thermo-Cautery No. 1, arranged for attachment of points straight (as shown in figure to the left) or at right angles. Separate blast lamp dispensed with. No Platinum Sponge in point, heretofore the usual cause of Thermo-Cauteries getting out of order. By working the bulbs of this cautery, vapors of Benzine will at first escape around the point, which, ignited with a match, in about half a minute bring about initiatory incandescence. A slight manipulation thereupon conducts the vapors to the inside of the point and establishes permanent incandescence. No other Thermo-Cautery, so far as legitimate use is concerned (which does not include kicks of horses and the like of that,) excels this in durability and ease of manipulation.

New York, Jan. 15, 1897.

Thermo-Cautery No. 1, which I purchased from you has been in use for a year and a half, during which time I fired 291 animals (93 spavins, 56 curbs and ringbones, 142 splints, ankles, back-tendons, etc.). In that time I have had to have only part of the rubber bulbs renewed and one of the platinum points (bent by accident) straightened. In every case the results were very satisfactory.

Very truly yours,
Dr. HERBERT NEHER,
Surgeon to Metropolitan Street R. W. Co.

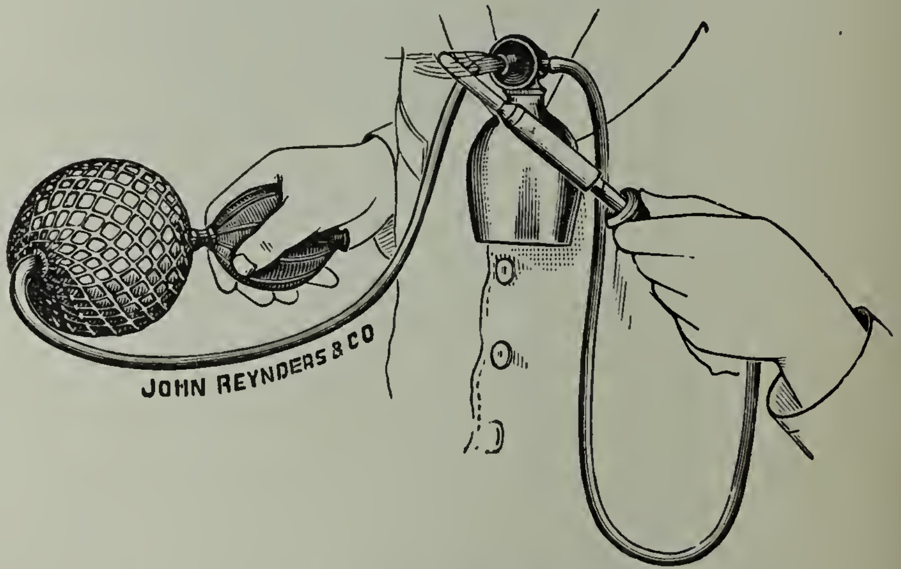
Helena, Mont.

Gentlemen: Your Improved Thermo-Cautery No. 1, is very fine, and has never given me the least trouble.

Very truly,
M. E. KNOWLES, D.V.S.,
Surgeon to the Daly Studs.

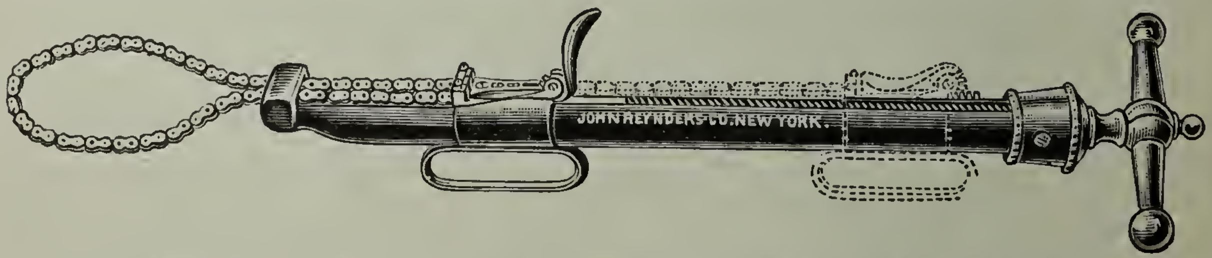
(*See figure to the right.*)

This Thermo-Cautery has not yet gone out of sale, here and there being the choice amongst those seeing both apparatus. A Benzine Receiver is attached to the vest or coat, and the point is attached to a handle.



John Reynders & Co.'s Thermo-Cautery No. 2. Original Pattern.

Our New Catalogue of Veterinary Instruments and Appliances, Books, Drugs and Horse Goods, 116 Pages (750 Illustrations) mailed free to those mentioning this publication.


JOHN REYNDERS & CO. NEW YORK.

John Reynders & Co.'s King Ecraseur; the best of Slack Takers Up.

We call special attention to our Slings, Floats, Dental Outfits, New Mouth Specula, Combination Hoof Testing Forceps, Impregnators, Obstetric Instruments and Horse-Securing Apparatus, &c., &c.

SANITAS
DISINFECTANTS

Are true Germicides, quite free from Poisonous and Corrosive Properties. . .

●

SPECIAL VETERINARY PREPARATIONS.

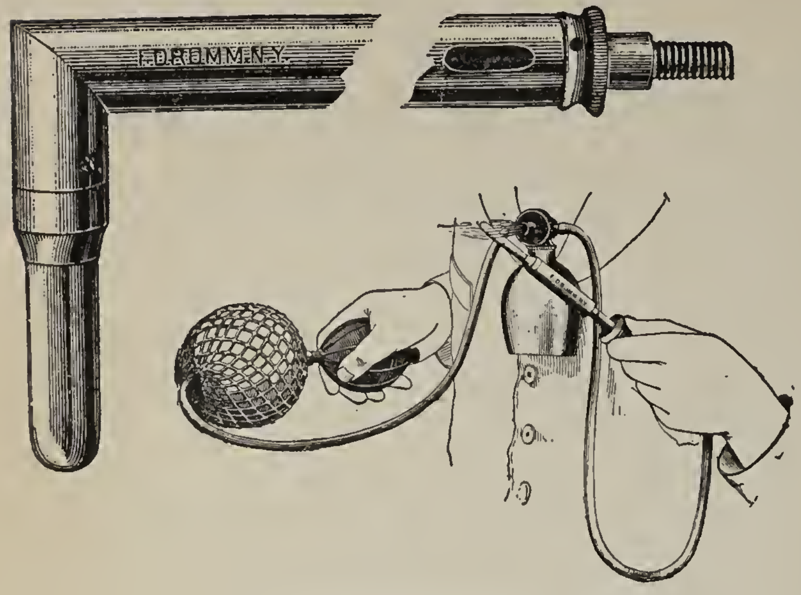
Used by over 1,000 Hospitals
and Boards of Health . . . .

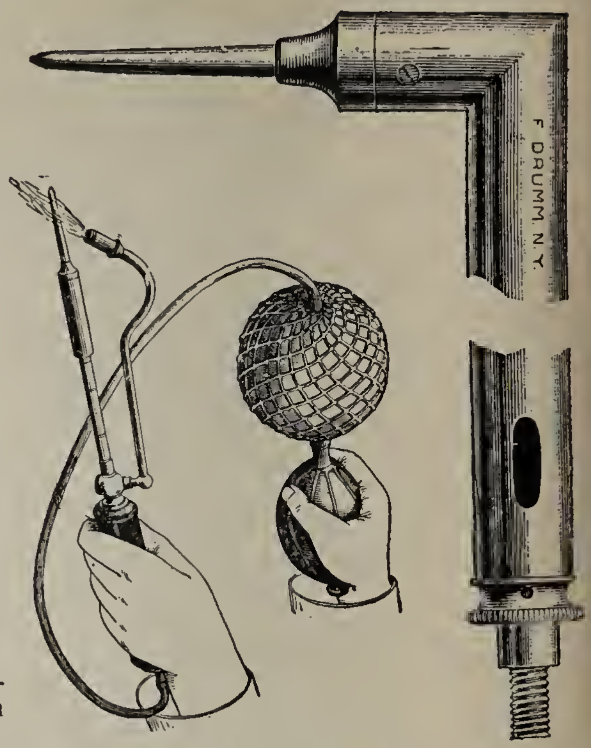
●

Copies of our Illustrated work "How to Disinfect" sent free to Veterinary Surgeons and Horse breeders on application

THE SANITAS CO.,
[LIMITED]
636 to 642 West 55th Street,
NEW YORK CITY.

A NEW COMBINED THERMO-CAUTERY.





F. Drumm's Improved.

SHEEPSHEAD BAY, N. Y., October 14th, 1896.

This is to certify that I have used the Thermo-Cautery manufactured by Mr. F. Drumm and it has given me perfect satisfaction in every particular.

WILLIAM SHEPPARD, M. R. C. V. S.

Patent Awarded JULY 16, 1896.

F. DRUMM,

MANUFACTURER OF **Paquelin's Thermo-Cautery,** 43 Park St., S. E. Cor. Pearl St., NEW YORK.

Special Platinum Tips made to order. Surgical Instruments and Experimental Work; also Tips for Physicians' and Veterinarians' use. Repairing same. Price and Directions on application.

1898

The first edition of the 1898 calendar (an unusually interesting one) will be ready for delivery early in December. Copies mailed on receipt of stamps or currency at the rate of seven cents per copy.

SPRATTS PATENT LIMITED,
245 EAST 56TH STREET, NEW YORK CITY.

E. BOCKER,

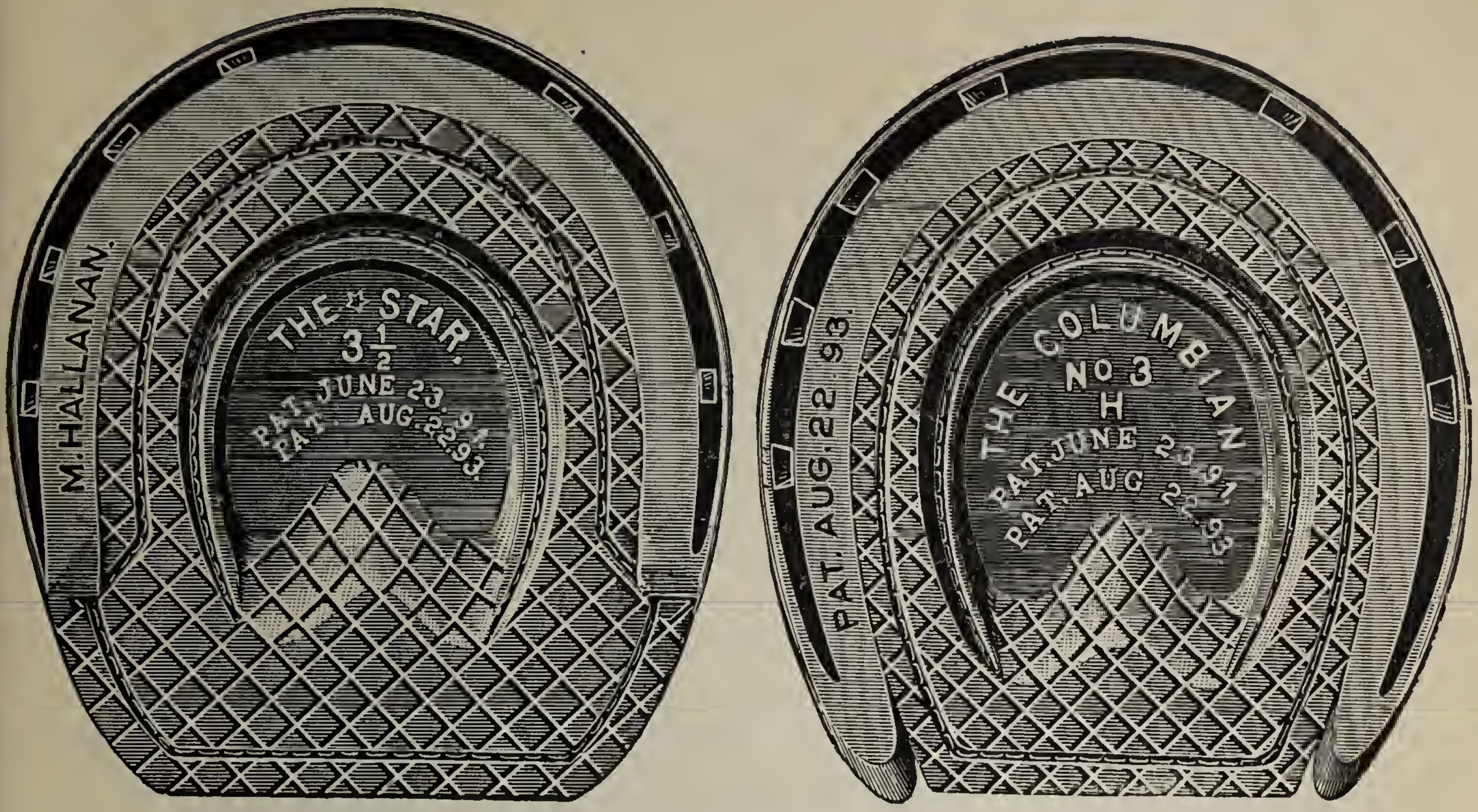
MANUFACTURER OF

Veterinary and Surgical INSTRUMENTS,

582 HUDSON STREET,

Near Bank Street, NEW YORK.

THE HALLANAN VULCANIZED RUBBER HORSESHOE PAD.



A Mechanical Production Combining a Rubber Pad with Canvas Firmly Secured to a Sole-leather Back.

By this means securing for the horse an even distribution of the weight over the entire solar surface of the foot.

It does away with the necessity of heel and toe calkings.

It permits the use of a lighter shoe with narrower web, and thus enables the shoer to maintain closer adjustment of the shoe to the crust of the foot, while the pad, made of rubber, lessens the concussion and jar, and at the same time divides the force and weight over the entire ground surface.

A full shoe is allowed by its use, and the objection of too much direct heel pressure avoided.

It does away with the need of sharpening in winter weather and gives confidence to the horse on icy pavements. Where asphalted streets exist it is a safeguard from slipping and the severe strain from concussion.

For weak, contracted, or low-heeled feet they, while aiding the removal of these defects, enable constant use of the animal.

These pads will last from two to three months. They have met with the approval of many of the most prominent veterinarians, horsemen, and horse owners in New York, Brooklyn, Philadelphia, and wherever placed before the public.

For testimonials and any other information, write or call upon

M. HALLANAN,
Inventor, Patentee and Manufacturer,
190 West 4th St., New York City.

Tuberculine

and

Malleine

MAY BE OBTAINED FROM THE

NEW YORK BIOLOGICAL AND VACCINAL INSTITUTE

AT THE FOLLOWING RATES:

TUBERCULINE.	
One injection,	$ 0.40
Two injections, in one bottle	0.60
Four " " " "	1.00
Ten " " " "	2.20
One hundred injections, in 10 dose bottles,	16.50

MALLEINE.	
One injection,	$ 0.45
Two injections, in one bottle,	0.85
Four " " " "	1.50
Ten " " " "	3.00
One hundred injections, in 10 dose bottles,	23.00

SPECIAL PRICES FOR ORDERS ABOVE ONE HUNDRED INJECTIONS

NOTICE.—The fluids are ready for use without addition of water, and put up in sealed glass tubes containing one injection each, or in vials containing 25 cubic cm. (ten injections).

The New York Biological and Vaccinal Institute has its laboratory located at the N. Y. Pasteur Institute, and can supply, also, any quantity of

Tetanus Antitoxin

for horses, at $3.00 per bottle of 25 cc. containing several millions of Antitoxin units. Instructions and reports of cases sent on application.

SPECIAL SYRINGE

to make from one to ten injections without refilling the instrument, $3.00.

PASTEUR INSTITUTE BUILDING,
1 West 97th Street,
NEW YORK.

HE C. F. HARVEY CO., Manufacturing Chemists,
Saratoga Springs, N. Y., Sole Agents for United States and Canada.

SALT BRICKS FOR HORSES.

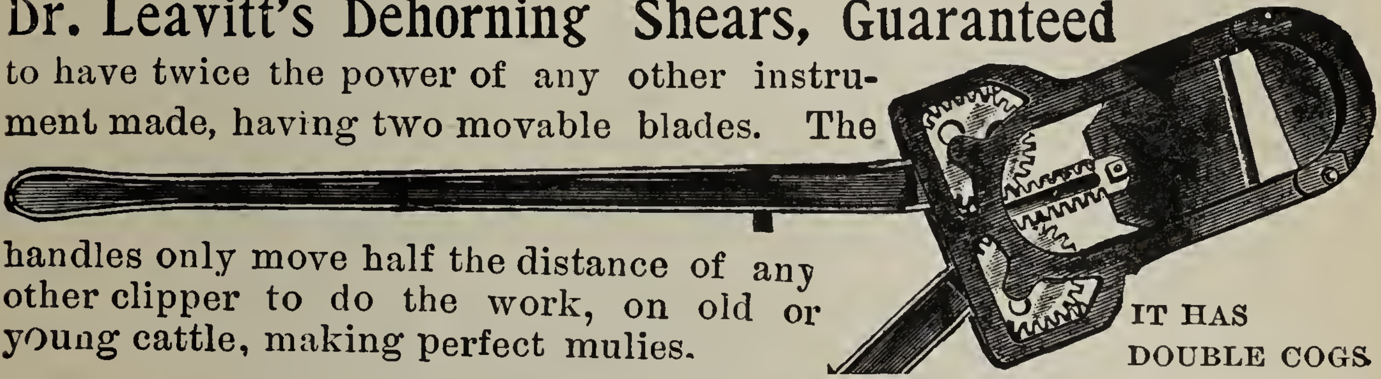
PURE SALT (*Refined*) acts as a tonic, invigorates the system, promotes digestion, purifies the blood, increases strength of bone and muscle; in fact, is a stimulus for the general health and thrift of animals, as well as with mankind.

ROCK SALT in its natural state, *is not pure salt.* It is contaminated with foreign substances, such as the sulphates and chlorides of magnesium and calcium, bromides, gypsum, grit, etc., which have to be expelled in the process of refining before it is fit to be used. This impure salt is gritty and bitter; it also has a burning, acrid and puckery taste. The animal eats it slowly and reluctantly, with poor satisfaction. It is more injurious than beneficial when used.

SALT BRICK MFG. CO.,
(*Write for circular.*)

259 GREENWICH ST.
NEW YORK.

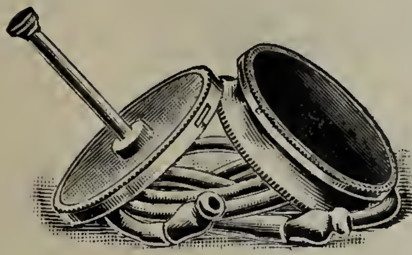
We invite Special Attention of Vet. Surgeons to the Pure Salt contained in these Bricks.



Dr. Leavitt's Dehorning Shears, Guaranteed to have twice the power of any other instrument made, having two movable blades. The handles only move half the distance of any other clipper to do the work, on old or young cattle, making perfect mulies.

IT HAS DOUBLE COGS

Leavitt M'f'g. Co. Hammond, Ill., U S A



Bazzi-Bianchi

Phonendoscope

Velvet-lined Case, $4.

BEWARE OF INFRINGEMENTS.

All genuine have our name on instrument. Buy from your dealer, or, if not in stock, **from us direct.**

GEORGE P. PILLING & SON,
1229 Callowhill Street, Philadelphia,
SOLE AGENTS FOR U. S. A.

Ask your Horse Goods Dealer for SPEAR'S

No. 95X BANDAGE.

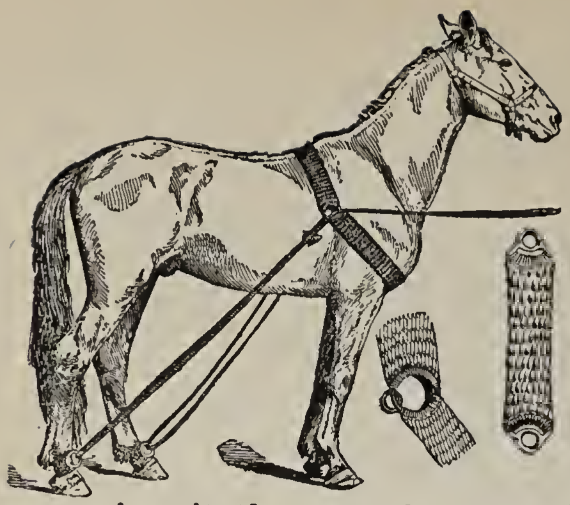
Single Web. Binds closely and never slips down, nor stretch or "string" out. Very Elastic in width, allowing play at the Joints. Guaranteed the best article made for Bandaging Horses. $1 per set, postpaid.

SPEAR & CO., Bloomfield, N. J.

REVIEW BINDER

60 CENTS.

W. R. JENKINS,
851-853 SIXTH AVE.,
NEW YORK.



W. F. KNOWLES'

Web Casting-Harness.

The Web Casting-Harness here shown is most simple in construction. It weighs but 3½ pounds, and will fold up small enough to be carried in the pocket. It is fully guaranteed to be stronger and more durable than any harness can be made of leather weighing less than fifteen pounds. It is attractive in appearance and pronounced by those who are using it the very best appliance of the kind ever offered to the public.

"I never saw a horse go down so easy and tied so securely and so quickly before in my life."—*Professor in Chicago Veterinary College*, March, 1892. (The Web Casting-Harness used weighed but 2½ pounds.

"I have made a business of castrating for sixteen years, and in that time have used many different kinds of casting-harness, but your Web Casting-Harness beats them all. I have used it on over 400 different horses, and it is just as good to-day as it was the day when I received it."—*Charles J. Johnson, Brandon, Douglass Co., Minn.*, April 8, 1896.

"Please express me one of your Web Casting-Harness. My brother, who lives in Ontario, and has been practising for twenty years, was here. I threw two horses to show him how slick it could be done. He was surprised, for he had never seen anything so simple, and I gave him my harness."—*A. S. Brodie, D.V.S., Cedar Falls, Ia.*, January 4, 1897.

"For large ridglings have used the Conkey harness, which is very clumsy, and complicated. I have the English hobbles and others, but they do not compare with yours. The Web Casting Harness, is the most useful and handiest I ever used."—*Thomas Bland, D. V. S., Waterbury, Conn.*, June 17, 1896.

The Web Casting-Harness must sooner or later take the place of every other appliance now used by the profession to confine a horse. Send your orders to W. F. KNOWLES, James, Iowa.

Manufactured at James, Iowa. **PRICE, $5.00.**

FRIEDBERGER & FRÖHNER'S

Pathology and Therapeutics of Domestic Animals,

TRANSLATED BY PROF. W. L. ZUILL.

Two volumes; Price, $5.00 per volume.

The most complete text-book on the practice of Veterinary Medicine, embracing all species of Animals.

For sale by all booksellers or will be sent post-free on receipt of price by

Prof. W. L. ZUILL, M.D., D.V.S.,

857 NORTH BROAD STREET, PHILADELPHIA, PA.

Dealers' Orders Supplied by

WM. J. DORNAN, PRINTER, 100 N. 7TH STREET, PHILADELPHIA.

THE MODERN SCHOOL

OF

VETERINARIANS.

I am not practicing human, but equine and canine medicine, and have only had one opportunity of testing the efficacy of **SANMETTO**, and that was a case of cystitis in a young setter bitch, in which case I used half drachm doses of **SANMETTO** four times daily with excellent results, the animal making a quick recovery. As dogs have many of the diseases of the human subject, any preparation which has a marked beneficial effect in human practice is certain to have the same in canine practice. I treat my canine patients entirely on the principles laid down in the human text books. I think **SANMETTO** would be a most valuable agent to overcome the kidney troubles and scanty secretion of urine in canine distempers, and it might be tried in one ounce doses in some of the inflammatory diseases of the urinary system of the horse with success. The Modern School of Veterinarians are finding daily how little difference there is between the constitution and diseases of man and the lower animals, and the Advanced School have entirely discarded the filthy, incompatible messes prescribed formerly, and use the best preparations in the market, with the result of giving more satisfaction, both to their patients and themselves.

Catonsville, Md. { STUART E. PAULET, M.D.C.,
RESIDENT PHYSICIAN,
CATONSVILLE VETERINARY DISPENSARY.

Vitalizing Tonic to the Reproductive System.

SANMETTO

FOR

GENITO-URINARY DISEASES.

☞ A **Scientific Blending** of **True Santal** and **Saw Palmetto** in a **Pleasant Aromatic Vehicle.**

SPECIALLY VALUABLE IN

**Prostatic Troubles of Old Men--Pre-Senility,
Difficult Micturition--Urethral Inflammation,
Ovarian Pains--Irritable Bladder.**

POSITIVE MERIT AS A REBUILDER.

EQUALLY VALUABLE IN

**Diseases of the Genito-Urinary Systems
OF THE HORSE AND DOG.**

Dose.—Adult Person, one teaspoonful four times a day.
In Equine Practice, a half to an ounce three times a day.
In Canine Practice, a half to a teaspoonful three times a day.

Price: One Bottle, $1.00.—One Dozen Bottles, $8.00. To be had of all Druggists.

OD CHEM. CO., 15 Cedar Street, New York.

JUST PUBLISHED

A TEXT BOOK
OF
VETERINARY OPHTHALMOLOGY

By George G. Van Mater, M.D., D.V.S.

Professor of Ophthalmology in the American Veterinary College; Oculist and Aurist to St. Martha's Sanitarium and Dispensary; Consulting Eye and Ear Surgeon to the Twenty-sixth Ward Dispensary; Eye and Ear Surgeon, Brooklyn Eastern District Dispensary, etc.

Illustrated by one Chromo Lithograph Plate and seventy-one engravings.

8vo, cloth, - **$3.00,** post paid.

This book being the only one published in the English language on Ophthalmology for Veterinarians, will be welcomed by Students and Practitioners. The diseases of the eye and the treatment are concisely described and therefore having a good index the book will be found of value.

WILLIAM R. JENKINS,
851 & 853 SIXTH AVENUE (N. W. cor. 48th St.),
New York.

HYDROZONE

(30 volumes preserved aqueous solution of H_2O_2)

IS THE MOST POWERFUL ANTISEPTIC AND PUS DESTROYER.
HARMLESS STIMULANT TO HEALTHY GRANULATIONS.

GLYCOZONE

(C. P. Glycerine combined with Ozone)

IS THE MOST POWERFUL HEALING AGENT KNOWN.

These Remedies cure all Diseases caused by Germs.

Successfully used in the treatment of Chronic and Acute Ulcers (Specific or not),

Skin Diseases, Eczema, Psoriasis, Salt Rheum, Itch, Barber's Itch, Poisoning Ivy, Acne, Etc.

Hydrozone, applied to any open diseased surface, destroys the pus leaving the tissues beneath in a healthy condition. Then **Glycozone,** being applied to the clean surface, stimulates healthy granulations and heals the sore.

Inflammatory and Purulent Diseases of the Ear. Otitis Media, Etc.

By means of a glass syringe, inject **Hydrozone,** either full strength or diluted, and complete the dressing with a small roll of cotton well impregnated with **Glycozone.**

Send for free 240-page book "Treatment of Diseases caused by Germs," containing reprints of 120 scientific articles by leading contributors to medical literature.

Physicians remitting 50 cents will receive one complimentary sample of each "Hydrozone" and Glycozone" by express, charges prepaid.

Hydrozone is put up only in extra small, small, medium, and large size bottles, bearing a red label, white letters, gold and blue border with my signature.

Glycozone is put up only in 4-oz., 8-oz. and 16-oz. bottles, bearing a yellow label, white and black letters, red and blue border with my signature.

Marchand's Eye Balsam cures all inflammatory and contagious diseases of the eyes.

PREPARED ONLY BY

Charles Marchand

Chemist and Graduate of the "Ecole Centrale des Arts et Manufactures de Paris" (France.)

Charles Marchand, 28 Prince St., New York.

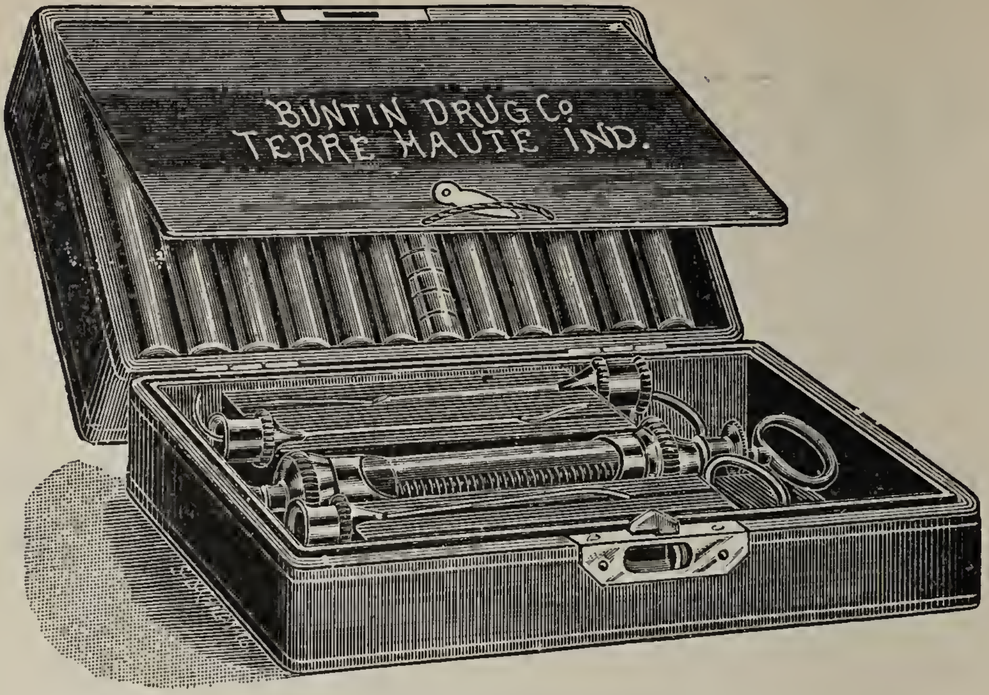
Sold by leading Druggists. Avoid imitations. ☞ Mention this Publication.

Pacific Coast Agent. F. A. BECKETT. 220 Sutter St.. San Francisco, Cal.

A most Popular Hypodermic Syringe with the Veterinary Medical Profession.

Substantial in Construction.

Perfect in Workmanship.



Our Syringes have "Buntin Drug Co," stamped into the metal barrel.

VETERINARY HYPODERMIC SYRINGE.

In Morocco case, velvet lined, containing two straight needles, one-half curved needle for intravenous injection, one trocar and canula, and twelve tubes for Hypodermic Tablets.

Our **Syringes are substantially made, especially for the use of Veterinary Surgeons,** with strong glass barrel of three drachms capacity, protected by fenestrated metal cylinder, with rings for thumb and fingers.

By removal of the lower metal end, one or more tablets may be placed directly in the syringe—replacing cap and attaching needle, water can then be drawn in upon the tablets and solution effected by shaking the syringe.

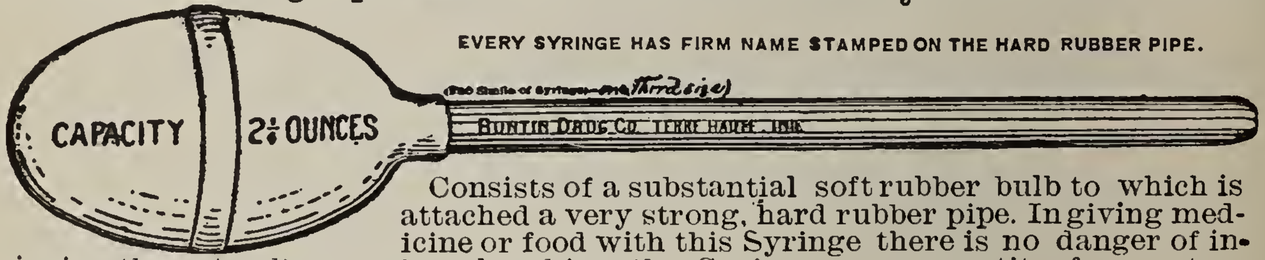
Our syringes are made with needles to attach either by slide or screw-thread. In ordering specify which is preferred.

Price of Syringe and case complete	$5.00
Extra Needles, straight	.35
Extra Needles, curved	.35
Extra Trocar and Canula	.50

BUNTIN DRUG CO'S VETERINARY BULB SYRINGE.

For administering Liquid Medicines to Horses & Cattle by the mouth or rectum

EVERY SYRINGE HAS FIRM NAME STAMPED ON THE HARD RUBBER PIPE.


(The Scale of Syringe—One Third size)
CAPACITY
2½ OUNCES
BUNTIN DRUG CO. TERRE HAUTE, IND.

Consists of a substantial soft rubber bulb to which is attached a very strong, hard rubber pipe. In giving medicine or food with this Syringe there is no danger of injuring the animal's mouth or breaking the Syringe; any quantity from a teaspoonful to two ounces may be given at one injection.

BUNTIN DRUG CO., TERRE HAUTE, INDIANA.

Manufacturers of Veterinary Hypodermic Tablets and Hypodermic Syringes.

Price on Bulb Syringes, 75c. each; per half doz., $4.00; per doz., $7.50.

BUNTIN DRUG COMPANY,

600 Wabash Avenue, TERRE HAUTE, INDIANA.

EIMER & AMEND, Agents, 205-211 Third Ave., New York.

SOLUBLE HYPODERMIC TABLETS.

VETERINARY.

No.			Per tube of 10 tablets.	Per 100 (10 tubes).
114	Aconitine, Crystals	1-40 gr	$0 12	$1 00
115	Aconitine, Crystals	1-30 gr	13	1 15
100	Aconitine, Crystals	1-20 gr	15	1 30
116	Aconitine, Crystals	1-10 gr	17	1 50
117	Aconitine, Crystals	1- 6 gr	22	2 00
118	Aconitine, Crystals	1- 4 gr	27	2 50
101	Atropine Sulphate	1- 4 gr	15	1 30
121	Atropine Sulphate	1- 2 gr	18	1 60
119	Atropine Sulphate	1 gr	33	3 10
152	Cardiac Tonic		30	2 75
	Digitaline, Pure	1-10 gr.		
	Sparteine Sulph	1- 5 gr.		
	Strychnine, Nitrate	1- 8 gr.		
102	Cocaine Muriate	1 gr	43	4 00
124	Cocaine Muriate	1-½ grs	53	5 00
125	Cocaine Muriate	2 grs	64	6 00
120	Cocaine, 4½ grs. for Veterinary Anesthesia (One tablet dissolved in 1 drachm of water makes an 8-per cent. solution.)		1 25	12 00
103	Colchicine	1- 4 gr	22	2 00
126	Colchicine	1- 2 gr	33	3 00
127	Colic		65	6 00
	Morphine Sulph	2 grs.		
	Atropine Sulph.	1- 4 gr.		
	Aconite Cryst	1-20 gr.		
104	Coniine Hydrobromate	1- 2 gr	22	2 00
128	Coniine Hydrobromate	1 gr	38	3 50
105	Digitaline, Pure	1- 8 gr	12	1 00
129	Digitaline, Pure	1- 4 gr	14	1 25
156	Ergotine	2 grs	30	2 75
157	Ergotine	4 grs	50	4 75
113	Eserine Salicylate	1- 4 gr	45	4 25
133	Eserine Salicylate	1- 2 gr	70	6 75
134	Eserine Salicylate	1 gr	1 25	12 00
135	Eserine Salicylate	1½ grs	1 85	18 00
106	Eserine Compound		1 00	9 50
	Eserine Salicylate	1- 4 gr.		
	Pilocarpine Muriate	1- 2 gr.		
	Strychnine	1- 8 gr.		
153	Eserine and Pilocarpine		1 75	17 00
	Eserine	1- 2 gr.		
	Pilocarpine	1 gr.		
154	Colic (Forbes)		3 50	32 50
	Eserine Salicylate	1 gr.		
	Pilocarpine Mur.	3½ grs.		
107	Hyoscyamine Sulphate, Crystals	1- 8 gr	70	6 50
146	Hyoscyamine Sulphate, Crystals	1- 4 gr	1 35	13 00
108	Morphine Sulphate	1 gr	19	1 75
136	Morphine Sulphate	1½ grs	27	2 50
137	Morphine Sulphate	2 gr	33	3 00
138	Morphine Sulphate	2½ grs	37	3 50
155	Morphine Sulphate	3 grs	50	4 75
109	Morphine and Atropine		34	3 25
	Morphine Sulph	1½ grs.		
	Atropine Sulph	½ gr.		
139	Morphine and Atropine		33	3 00
	Morphine Sulph	1½ grs.		
	Atropine Sulph	¼ gr.		
140	Morphine and Atropine		39	3 75
	Morphine Sulph	2 grs.		
	Atropine Sulph	1-4 gr.		
141	Morphine and Atropine		45	4 25
	Morphine Sulph	2½ grs.		
	Atropine Sulph.	1-4 gr.		
142	Nitroglycerine	1-10 gr	14	1 25
143	Nitroglycerine	1-5 gr	17	1 50
110	Pilocarpine Muriate, Crystals	1-2 gr	75	7 25
144	Pilocarpine Muriate, Crystals	1 gr	1 40	13 50
145	Pilocarpine Muriate, Crystals	1½ grs	2 00	19 50
111	Sodium Arsenite	1 gr	12	1 00
112	Strychnine Sulphate	1-4 gr	12	1 00
147	Strychnine Sulphate	1-2 gr	13	1 10
148	Strychnine Sulphate	1 gr	14	1 25
149	Veratrine Muriate	1-4 gr	12	1 00
150	Veratrine Muriate	1-2 gr	14	1 20

Please order by number.

HARVARD UNIVERSITY,
SCHOOL OF VETERINARY MEDICINE.

The course is a **graded** one of three years of nine months each.

There are unequalled facilities for practical instruction in all branches; and the hospital, maintained in connection with the school, places a large practice under the constant observation of students.

For illustrated catalogue, and all further information, apply to

CHARLES P. LYMAN, F.R.C.V.S., Dean.

Graduates of this school are eligible for membership in the United States Veterinary Medical Association.

The Kansas City Veterinary College,

1404-1406 Holmes Street,

Kansas City, = = = Missouri.

A three year graded course Unexcelled opportunity for acquiring a practical knowledge of Meat Inspection and Dairy Inspection. Applicants for admission must conform to the rules adopted by the Association of College Faculties of North America. . . . . . .

FOR CATALOGUE, ADDRESS . . . . **S. STEWART, Dean.**

UNIVERSITY OF PENNSYLVANIA.

VETERINARY DEPARTMENT.

The course of instruction is graded and extends over three years, with one session beginning the 1st of October and ending the last of May in each year.

Practical Instruction, including Laboratory Work in Pharmacy, Chemistry, General Biology, Histology, Physiology, Comparative Osteology, Dissecting, Botany, Pathology, Bacteriology, and Inspection of Meat and Milk, with personal care and treatment of animals in the hospitals and clinics, is a part of the regular course without additional expense.

Graduates of this school are eligible for membership in the United States Veterinary Medical Association.

For Catalogue, Address **JOHN MARSHALL, M. D.,** Dean of Veterinary Faculty,
Cor. 36th and Pine Sts., Philadelphia, Pa.

McGILL UNIVERSITY,

Faculty of Comparative Medicine and Veterinary Science,

(LATE MONTREAL VETERINARY COLLEGE)

Office, No. 6 Union Avenue, Montreal, Canada.

SESSION 1897-98 begins first week in October.

This school affords the advantages of a full University course, and the use of the laboratories and other appliances for teaching, equal to any similar institution.

For Calendar, giving full information, address

CHARLES McEACHRAN, D.V.S., Registrar,
No. 6 Union Avenue, MONTREAL.

McKILLIP VETERINARY COLLEGE,

CHICAGO.

The course of instruction at this College is systematic and thorough, giving a complete professional education. The College is backed by the largest veterinary practice in the country with the greatest opportunities for practical instruction, while at the same time it pursues the highest scientific work in its bacteriological laboratories for the production of blood serum preparations.

The course commences in October and extends over three years, with six months duration. Students graduating from this College are eligible to membership in the U. S. Veterinary Medical Association.

For catalogue and information, apply to

L. A. MERILLAT, Secretary.

University of the State of New York.

NEW YORK COLLEGE OF VETERINARY SURGEONS AND SCHOOL OF COMPARATIVE MEDICINE.

(Chartered 1857)

The Course of Instruction is Graded and Extends over Three Years of Six Months Each.

A large and well equipped hospital furnishes abundant material for clinical instruction, and thoroughly appointed laboratories are provided for practical work in chemistry, pharmacy histology, and bacteriology.

For circular giving detailed information apply to

H. D. GILL, V.S., Dean, 154 E. 57th St., New York.

ONTARIO VETERINARY COLLEGE,

40 and 42 Temperance Street, Toronto.

Patrons.—Governor-General of Canada and Lieutenant-Governor of Ontario.

SESSION 1897-98 BEGINS IN OCTOBER.

All Experienced Teachers. **Fees, $60.00 per Session.**

Prof. SMITH, V.S. (Edin.) F.R.C.V.S., Etc., Principal.

CHICAGO VETERINARY COLLEGE

2537 and 2539 State Street, Chicago, Ills.

Organized and Incorporated under the Laws of the State of Illinois, 1883.

Regular Session commences the first week in October in each year.

For Prospectus giving all information as to curriculum, fees, etc., address the Secretary

JOSEPH HUGHES, M.R.C.V.S.,
2537 and 2539 State St., Chicago, Ills.

UNITED STATES COLLEGE OF VETERINARY SURGEONS,

222 C Street, N. W., Washington, D. C.

The course of instruction is graded and conforms to the rules adopted by The Association of Veterinary Faculties of North America.

LECTURE FEES, $65.00 per annum. *For Prospectus and Full Information, Address,*

C. BARNWELL ROBINSON, V. S., Dean.

NEW YORK STATE VETERINARY COLLEGE,

ESTABLISHED AT

CORNELL UNIVERSITY, ITHACA, N. Y.

BY CHAPTER 153, LAWS OF 1894.

The best equipment for scientific and practical instruction, for undergraduates and post-graduates. Most varied practice for students in the free clinics. Regular graded course, three years of nine months each. Highest requirements for matriculation and graduation. Entrance by Regents' "Veterinary Student Certificate," or by examination, September 14th, 1897. Instruction begins September 23d, 1897.

❧ ❧ ❧ **Tuition Free to New York State Students.**

For extended announcement address,

Professor JAMES LAW, F. R. C. V. S., Director.

THE COLUMBIAN UNIVERSITY, VETERINARY DEPARTMENT.

(Formerly the National Veterinary College.)

The course of instruction is graded and extends over three years. Each session begins October 1st, and lasts six months.

Practical and theoretical instruction given in **modern laboratories** in **Anatomy, Histology, Pathology, Bacteriology,** and **Chemistry**. Other subjects taught by means of didactic and clinical lectures. Full courses on **Sanitary Medicine, Meat Inspection, Practice of Medicine, Surgery, Human** and **Veterinary Physiology, Obstetrics, Zootechnics, Materia Medica, Therapeutics, Canine Pathology, Animal Parasites, Embryology.**

The faculty has been strengthened by the addition of competent veterinarians as instructors. Time allowances made to students from other colleges. Veterinary graduates may enter senior class. For announcement, address, DR. CHARLES F. DAWSON, SECRETARY,
New Jersey Ave. and O St., N. W., Washington, D. C.

DR. D. E. SALMON, Dean.

LITMUS PENCIL

Chemically Pure - -
Red and Blue Litmus

In a small, handsome metal pocket pencil.

The most convenient and useful novelty ever invented for physicians' use. Perfectly reliable, never deteriorates. A piece of the best litmus paper made at a moment's notice. Sent by mail, with full directions on receipt of

Price, 25 Cents.

J. S. TYREE, Chemist, - - - Washington, D. C.

ESTABLISHED 1851.

EIMER & AMEND,

Wholesale Druggists,

205, 207, 209 and 211 Third Avenue, New York,

(18th Street. Elevated R. R. Station)

Make a Specialty of all

Drugs,
Extracts,
Tinctures,
Chemicals,
ETC., ETC.,

Used in Veterinary Practice.

PLANTEN'S Empty
Veterinary CAPSULES

For Oral use, 7 Sizes: 1-2, 1, 2, 3, 4, 8 and 12 drachms.
" Rectal " 3 " 1-2, 1 and 1 1-2 ounce.
Sample Box, all sizes, 25 cents.

Send for detailed price list.

H. PLANTEN & SON, ESTABLISHED 1836.
224 WILLIAM STREET, NEW YORK.

Prof. A. Liautard's Works.

WILLIAM R. JENKINS announces as in course of publication the following important works :—**A Treatise on Veterinary Surgical Therapeutics of the Domestic Animals,** by Professor P. J. Cadiot and J. Alvary, Translated by Prof. A. Liautard, M.D., V.M., 2 volumes ; also **A Dictionary of Veterinary Medicine.** By Prof. A. Liautard, M.D., V.M.

JUST PUBLISHED,

Median Neurotomy.

In the Treatment of Chronic Tendonitis and Periostosis of the Fetlock.

By C. PELLERIN, late repetitor of Clinic and Surgery to the Alfort Veterinary School. Translated, with Additional Facts Relating to It, by Prof. A. Liautard. M.D., V.M.

8vo, boards, illustrated, $1.00.

The translation bears with it the experience and ripe judgment of Prof. Liautard, whose rank as a surgeon is not surpassed in our country. The work will be gratefully received by those veterinarians who for many years have relied upon counter irritation and the actual cautery for dealing with these lesions, and who have had so many grevious disappointments in this line of treatment. The operation has already found favor in this country.

—*Journal of Comparative Medicine and Vet. Archives.*

Very full and explicit directions are given of the operation, the regional anatomy is described in succinct form, and abnormalities likely to occur are specified ; and we think that those who desire to become acquainted with an operation that is not uncommonly made use of on the continent, and of which we have published annotations, cannot do better than buy the work.—*The Veterinarian.*

LIAUTARD. "Manual of Operative Veterinary Surgery."

By A. LIAUTARD, M.D., V.M., Principal and Professor of Anatomy, Surgery, Sanitary Medicine and Jurisprudence in the American Veterinary College ; Chevalier du Merite Agricole de France, Honorary Fellow of the Royal College of Veterinary Surgeons (London) etc., etc.

8vo, cloth (780 pp., and nearly 600 illustrations)—$6.00.

Animal Castration

The only work on the subject in the English language. Illustrated with nearly fifty engravings. 12mo, Cloth, $2.00.

The book is divided into several chapters, treating of all the various methods of castration of the horse, cattle, sheep, pigs and fowls, including the operation on cryptorchids, and of the accidents and complications arising as secondary to the operation.

Lameness of Horses

And Diseases of the Locomotory Apparatus. 12mo, Cloth, $2.50

How to Tell the Age of the Domestic Animals

12mo, Cloth, 50 Cents.

This is a very excellent and lucid treatise on the age of the domestic animals, embodying the author's well-known chart on the subject and explaining simply and concisely the method of ascertaining the age of horses, cattle, sheep, dogs and pigs. The text is illustrated with over forty engravings of teeth, and the work is an invaluable one to the veterinary student, the buyer of animals, and the veterinary practitioner.

Vade Mecum of Equine Anatomy

For the use of Advanced Students and Veterinarians. 12mo, Cloth, $2.00.

Zundel on the Horse's Foot

Translated by Dr. A. Liautard. 8vo, Cloth, Illustrated, $2.00.

This is a most complete and scientific treatise on the subject of the horse's foot, and its diseases, and its translation into English by such a distinguished veterinarian as Dr. Liautard must make it a valuable acquisition to the list of veterinary literature. It is practical and thorough in its description and the text is illustrated with numerous excellent illustrations.

W. R. JENKINS, 851 and 853 Sixth Av., New York.

NEW AND IMPORTANT WORKS

—FOR—

Veterinary Surgeons, Lectures

AGRICULTURISTS, HORSE OWNERS, ETC.

◆

...*BY*...

WILLIAM R. JENKINS,
851-853 SIXTH AVENUE,
NEW YORK.

They are for sale by all Booksellers or will be sent post or express paid by the Publisher.

A HANDBOOK OF

HORSE-SHOEING

WITH INTRODUCTORY CHAPTERS
ON THE ANATOMY AND PHYSIOLOGY OF THE

HORSE'S FOOT

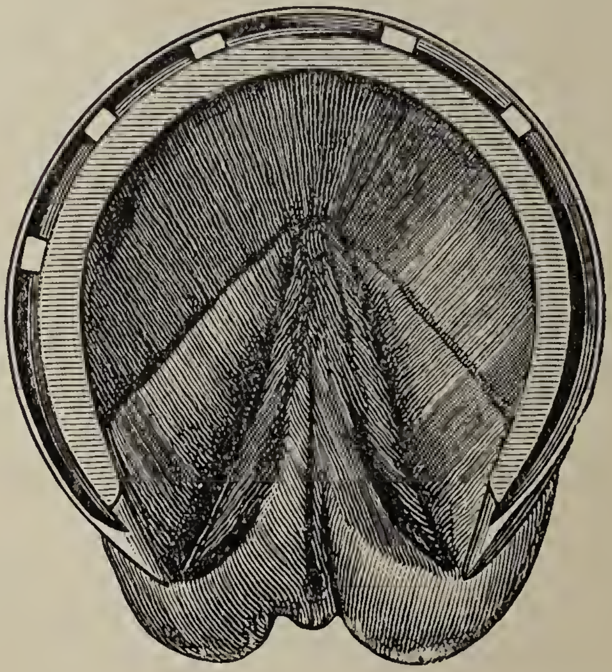
BY

JNO. A. W. DOLLAR, M.R.C.V.S.

TRANSLATOR AND EDITOR OF MÖLLER'S "VETERINARY SURGERY,"
"AN ATLAS OF VETERINARY SURGICAL OPERATIONS," ETC.

WITH THE COLLABORATION OF

ALBERT WHEATLEY, F.R.C.V.S.



THE above work deals in simple and non-technical language with the shoeing of all kinds of horses, from Steeple-chasers to Clydesdales. In each case it explains *why* one method of shoeing is good and another bad; in fact, the special feature of the book is the amount of light it throws on hitherto obscure points.

433 pp., 406 Illustrations. Price, $4.75,

POST OR EXPRESS PAID.

Breeding Racehorses by the... Figure System

COMPILED BY THE
Late C. BRUCE LOWE,

EDITED BY
WILLIAM ALLISON,
"The Special Commissioner," London Sportsman, Hon.
Secretary Sporting League, and Manager of
the International Horse Agency and
Exchange.

With Numerous Fine Illustrations of Celebrated Horses.

Price $7.50

Taken as a whole, the book will be found full of interest, sound reasoning, and novel ideas; the Figure System in itself being a model of convenience and simplicity, serviceable to all breeders alike, whether they agree with the author's deductions from it or not.—*Wm. Allison, In the Preface.*

It is impossible to do justice to Mr. Bruce Lowe's work within the compass of a newspaper article, but it may be said at the outset that it will undoubtedly be recognized as one of the greatest contributions to thoroughbred breeding that has ever been written. The book embodies the results of the author's long and varied experience in Australia, America and England, both in his observations of racing and breeding, and in his study of statistics relating to these subjects. It is modern and up to date in every respect, and in fact ahead of the times in many of its salient features. It represents a vast amount of labor in the compilation of statistics for which there is little to show except the theories founded on this data.

No more scientific treatise of the subject of breeding can be found.—*Spirit of the Times*

Breeding as a distinct business to be followed successfully requires depth of knowledge as well as that other necessary adjunct of success, money. How many breeders thoroughly understand the business? The answer is seen by counting the number who are successful. What is the rule that such people follow to achieve success? System. It is absolutely necessary to follow system.

We have just read an elaborate work on the most perfect of systems. It was from the pen of Mr. Bruce Lowe, a writer of note who recently died in England, after spending years in the study of the work. It is the creation of master minds throughout.—*The Horseshoers' Journal.*

THE CELEBRATED

PRACTICAL TOXICOLOGY

FOR PHYSICIANS AND STUDENTS

....BY....

Prof. Dr. RUDOLPH KOBERT,

Medical Director of Dr. Brehmer's Sanitarium for Pulmonary Diseases
at Goerbersdorf in Silesia (Prussia), late Director of the
Pharmacological Institute, Dorpat (Russia).

TRANSLATED AND EDITED BY L. H. FRIEDBURG, PH.D.

AUTHORIZED EDITION.

This work conveys "practical knowledge at a glance" by means of tables which, although occupying but little space, allow *at a glance* the observation of similarities and differences between poisons belonging to the same group. A copy of "The Rules for the Spelling and Pronunciation of Chemical Terms," as adopted by the American Association for the Advancement of Science, has been embodied in this work. Also, of the greatest importance, it has a very complete alphabetical index.

8vo, cloth. Price $2.50.

SOME ADVANCE NOTICES.

Dr. Friedburg has placed English speaking students of Toxicology under obligations to him for translating this excellent book on Toxicology. —JOHN MARSHALL, *Dean, Department of Medicine, University of Pennsylvania*

Professor Friedburg's excellent translation of this admirable book supplies to the English speaking public a most concise account of the very many poisons, and their effects and modes of treatment. A rapid diagnosis if as usually necessary can only be reached at times when just such a work is at hand, where in tabular form the eye can run rapidly over the list and determine the cause of trouble. Simple chemical tests are given for the recognition of the poisons and the therapeutic treatment is clearly indicated.—CHARLES A. DOREMUS, *College of the City of New York.*

I have long been acquainted with the German edition and am glad that students will now have access to an English translation.—VICTOR VAUGHAN, *Dean, Department of Medicine and Surgery, University of Michigan.*

The work will be found useful to students who care to examine more minutely into the action of poisons.—JOHN J. ABEL, *Johns Hopkins University.*

act fatally, without producing gross anatomical changes. Between the two we place the group of blood-poisons. With these, the blood only is found to have changed, or at least *primarily* so, and the changes within the other organs are brought about in consequence.

V.—The Diagnosis of Poisoning.

At times the recognition of a case of poisoning is comparatively an easy matter, while again, it may be very difficult, or even impossible. We can readily understand this when we consider the large number of poisons, how different their mode of action, and how the symptoms of one and the same poison may vary, according to the size of the dose and the form of administration. This fact becomes all the more apparent when we remember that the various symptoms (because they are only symptoms) may appear similarly in other diseased conditions. The following are, in general, the signs which are of importance in making a diagnosis:

1. *The Symptoms.*—For a great many acute cases, it is true, as the old saying has it, that poisoning, caused by the introduction of a poison from without, is probable when marked and violent symptoms suddenly appear in an individual previously perfectly healthy. But, on the one hand, people who have already been ailing may become poisoned; and, on the other hand, this statement excludes the frequent cases of chronic poisoning. Then, again, death can be caused suddenly by such disease as cholera, rupture of the heart, apoplexy, embolism, intestinal obstruction, peritonitis due to perforation of the intestine, uræmia. The suspicious symptoms become more conclusive when they appear shortly after the partaking of any food, and especially when they appear simultaneously in several persons, and even in domestic animals.

The symptoms may affect all the organs; the most important are vomiting, diarrhœa, convulsions, paralyses, cyanosis, dyspnœa and disturbance of the pulse. The following table seems to be of practical value in making a diagnosis:

TABLE OF THE MOST IMPORTANT SYMPTOMS OF ACUTE ACTION OF THE MORE COMMON POISONS.

NO.	IN THE PRESENCE OF THE FOLLOWING SYMPTOMS:	WE SHOULD FIRST THINK OF:
1	Death within a few moments	Hydrocyanic acid, potassium cyanid, carbon di-oxid, carbolic acid

THE CLINICAL DIAGNOSIS

OF

Lameness.... in the Horse

By W. E. A. WYMAN, V.S.,

Professor of Veterinary Science at Clemson A. and M. College,
and Veterinarian to South Carolina Experiment Station.

8vo, cloth, largely illustrated, $2.50.

Points as to the special merits of the work:

(1). It is the only modern work of its kind in the English language.

(2). It is an aid to the teacher, practitioner and student—being strictly scientific and at the same time abounding in practical points—in coping with the most important branch of surgery, viz., the diagnosis of Lameness.

(3). It is based upon anatomo-physiological laws, together with the teachings and observations of the most prominent German, English and American practitioners.

(4). It is confined strictly to one subject.

(5). It is the first English work on the clinical diagnosis of one special subject.

(6). It fills an empty space in veterinary science.

fracture is most satisfactorily diagnosed by rectal examination. The hand, in the rectum, easily detects abnormal mobility, crepitation and possibly swelling along the shaft of the ilium, either by walking the horse or by moving the leg otherwise. (See fig. 23.)

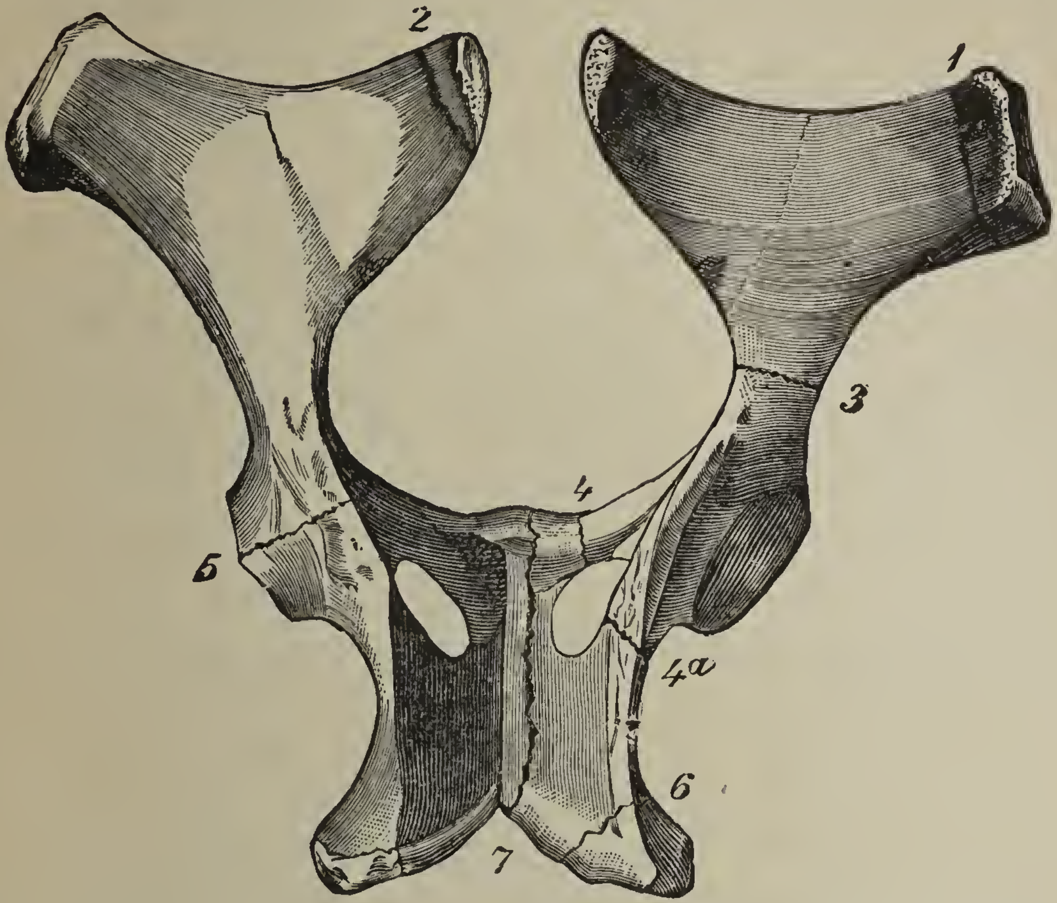


FIG. 23.—Schema illustrating fractures of the pelvis in the horse. (1) Fracture of external iliac angle; (2) internal iliac angle; (3) shaft of the ilium; (4) transverse portion of the os pubis; (4*a*) external portion of the ischium; (5) cotyloid cavity; (6) tuber ischii; (7) symphysis pubis.

3.—Fracture Through the Obturator Foramen.

Inspection.—Supporting-leg lameness. Usually no external deformity, but now and then one sees an œdematous swelling about the scrotum, udder, or belly, together with symptoms of internal hemorrhage, as blanched visible mucous membranes, hurried breathing, etc.

Palpation.—Rectal examination gives positive results as to crepitation and location of the fracture. (See fig. 23.)

The Art of Horse-Shoeing

A MANUAL FOR FARRIERS

...BY...

WILLIAM HUNTING, F.R.C.V.S.,

Editor of the Veterinary Record, Ex-President of the Royal College of Veterinary Surgeons, Member of the Committee for National Registration of Farriers.

8vo, cloth, with nearly one hundred illustrations, $1.00

This book is written for three classes of readers—for horse owners who may interest themselves in the subject, for farriers who are open to conviction, and for veterinary students who have to be examined. The method pursued has been, to first describe the form and action of the foot; next, the preparation of the foot for shoeing; then the form of a shoe is treated of, and the details to be observed in making it. The selection of shoes for varieties of feet or for special kinds of work follows, and afterwards the fitting and nailing-on are considered. Other chapters are devoted to "roughing," shoeing defective feet, accidents, the use of leathers and pads.

Throughout an endeavor has been made to be as simple and clear as possible in expression, to lay down correct general principles and to point out the technical details which are essential to good shoeing. * * * * The illustrations will be of assistance in making clear the text.—*Dr. Hunting, in the Preface.*

CHAPTER VII.

Fitting and Application of Shoes.

Having selected shoes suitable for the feet and adapted to the special work of the horse, having also prepared the foot for shoeing, we arrive at another important part of the farrier's art—fitting the shoe. No matter what form of shoe be used or how the foot be prepared for it, unless the two are properly fitted, the horse does not obtain all the advantages of good shoeing, and may be positively injured. The owner of horses seldom knows anything about the fitting of shoes, and therefore fails to appreciate how some of his directions concerning feet and shoes are quite impracticable.

I have, in a previous chapter, attempted to show how a foot should be prepared for shoeing, and what bearing surface should be left for the shoe. I have also described what I consider the best forms of shoe. The object, at all times, should be to follow nature as closely as possible, but it often happens that we may, with benefit, depart from the exact indications given and still fulfil all essential requirements. If we examine the unshod foot which has been worn down to proper proportions, we find the bearing surface is not level—it is worn more at the toe and heels than elsewhere. If we examine the ground surface of an old shoe the same thing is noticed—the surface is not level, the toe and heel show most wear. The question then arises, should we make the artificial bearing surface of the foot on the same plan and adjust the shoe to it, as in Fig. 48, or

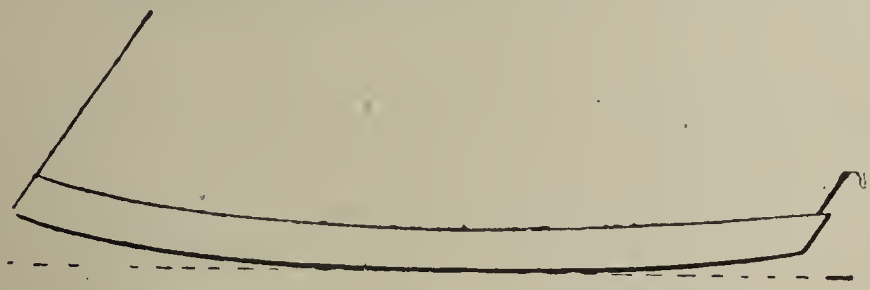


FIG. 48.—Shoe fitted to a curved foot-surface.

EXERCISES IN EQUINE SURGERY.

By P. J. CADIOT,
Professor of the Alfort Veterinary School.

Translated by A. W. BITTING, D.V.M.,
Formerly Veterinarian in the Florida Agricultural College and Experiment Station; Veterinarian to Purdue University and Agricultural Experiment Station.

Edited by A. LIAUTARD, M.D., V.M.,
Principal and Professor of Anatomy, Surgery, Sanitary Medicine and Jurisprudence, of the American Veterinary College, New York, etc., etc.

ONE VOL., 8vo, OVER 50 ILLUSTRATIONS, $2.50

This work, so well known and highly appreciated among the students and busy practitioners of France and many parts of Europe, is so complete and so valuable in the field it covers, that no American veterinary surgeon will want to take up any of the many of the equine surgical operations without reviewing for a moment the ever-thoughtful suggestions and reminders contained in this book. Fully illustrated, and added to by the editor, Prof. A. Liautard, it comes to us in a thoroughly acceptable style and attractive form, made so by that long experienced veterinary publishing house of W. R. Jenkins, of New York, that has produced from its presses so many valuable contributions to veterinary literature. We are sure this will prove one of the most sought-for books ever issued by this house.—*Journal of Comparative Medicine and Veterinary Archives.*

It is a first-class guide for practitioners as well as students. All the operations are clearly and concisely treated, the best way of restraining the horse, the requisite instruments, and each step of the operation being described. In many cases the procedure is made more plain by well executed drawings. The work is translated by Dr. A. W. Bitting, and edited by Professor Liautard, both of whom deserve the thanks of English speaking readers for putting at their disposal a reliable guide to operative surgery.—*The Veterinary Record.*

It is needless to say that everything given is of the best, the character of the learned author vouching for the standard of the work; the illustrations are good and helpful; the printing and binding are first-class. We advise all students and practitioners to purchase the work,—it will be money well invested, and we are convinced that it will be constantly referred to with advantage.—*The Veterinarian.*

Every page of this small book contains valuable information, not only in the letter-press, but in an equal degree in the well executed drawings which are employed to illustrate all the important and many of the minor operations.

All the directions are given in the most simple and exact terms, and each step is separately indicated with so much precision, that even a tyro in the use of surgical instruments would hardly fail in an operation which he might be called upon to perform for the first time.—*The Field.*

The illustrations, mostly from the pencil of M. Nicolet, are of a very high order, and help most materially to render the text clear. The translator, Dr. Bitting, has done his work faithfully. The editor, Dr. Liautard, contributes a preface, and there is little doubt that the hope therein expressed by him will be realized, that "this little work will not fail to prove of some value and advantage to the veterinary student and practitioner."—*British Medical Journal.*

Fourth step : Suture.—Unite the lips by one or two stitches, according to the extent of the incision.

Cover with flannel, replace the limb in the hobble, turn the animal, and after re-securing the member in a convenient position make the operation upon the opposite side.

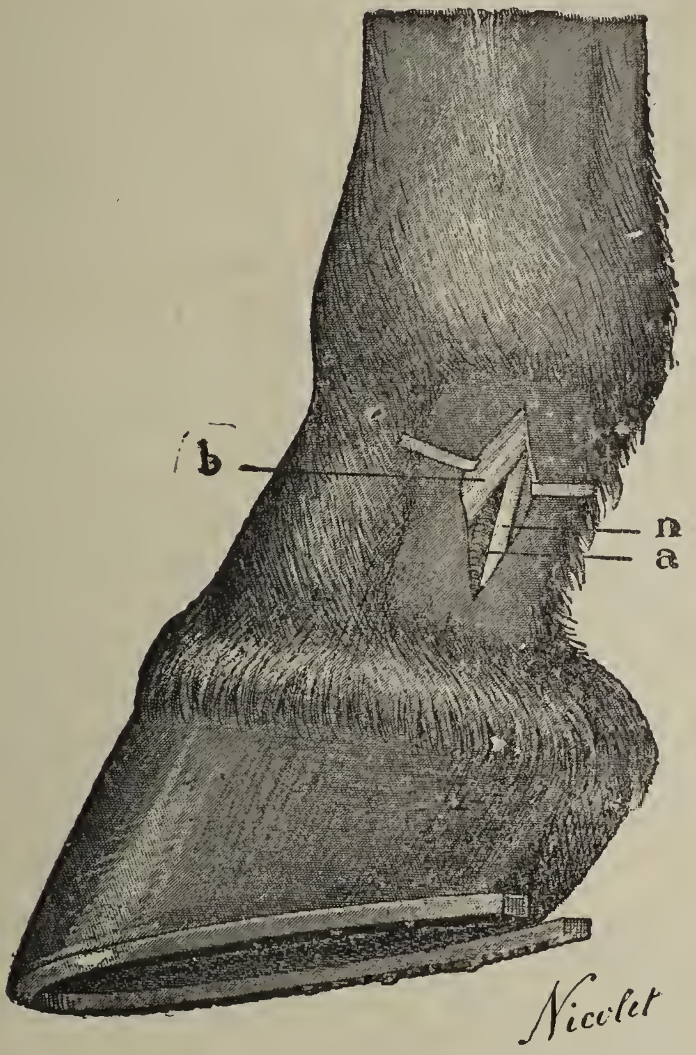


Fig. 49.—Plantar neurectomy below the fetlock.
b, ligament of the plantar cushion; a, digital artery; n, plantar nerve.

2.—Plantar Neurectomy above the Fetlock. (Metacarpal or Metatarsal Neurectomy.)

Restraint.—The limb should be shackled as for the preceding operation, being careful nevertheless to attach the rope sufficiently high upon the canon that the inferior part of that region remains uncovered.

One may also unite the limb to be operated upon with its congener with a rope in figure 8; unhobble the first and carry

A TEXT BOOK OF Veterinary Ophthalmology

By GEORGE G. VAN MATER, M.D., D.V.S.,

Professor of Ophthalmology in the American Veterinary College;
Oculist and Aurist to St. Martha's Sanitarium and Dispensary;
Consulting Eye and Ear Surgeon to the Twenty-Sixth
Ward Dispensary; Eye and Ear Surgeon,
Brooklyn Eastern District Dispensary, etc.

Illustrated by one Chromo Lithograph Plate and seventy-one Engravings.

This book, being the only one published in the English language on Ophthalmology for Veterinarians, will be welcomed by Students and Practitioners. The diseases of the eye and the treatment are concisely described, and therefore, having a good index, the book will be found of valve.

8vo, cloth. $3.00.

Van Mater's Veterinary Ophthalmology I find to be a very valuable contribution to Veterinary Literature. It meets the needs of the practitioner and the student. The Kansas City Veterinary College gladly adopts it as its text-book on that subject.—SESCO STEWART, M.D., D.V.M., *Dean of the Kansas City Veterinary College.*

The preface states that the book was written for students who wish to study the eye without having to peruse the many pages of books written solely for human students. We think he has succeeded in his task and produced a useful text-book for veterinary students. There is intrinsic evidence that the author is a practical ophthalmic surgeon, for such a book is just what veterinary students want.—*The Veterinary Record.*

It is a concise and well-written little work, the result of close study and careful observation afforded him in clinical and private practice and from the perusal of the best and most recent works in that department of medicine and surgery, and intended to convey in as few words as possible a comprehensive knowledge of the subject to the busy veterinarian. It is a work of great value, explaining in a few words the latest research in ophthalmic medicine or surgery, and to the horse owner in a clear and plain manner the anatomy of, and the diseases that the eye is subject to, and treatment for the same. It is a book that should be in the library of every surgeon and horse owner.—*Spirit of the Times.*

Specimen Page

of vascularity, and *no ulcers existing*, the Jequirity infusion offers good results. *Opacities* are frequently the result of corneal inflammations and cicatricial deposits. While they are classified according to degree, they are practically divided into superficial and deep, the former affecting the epithelial layer, the latter the parenchyma. A faint superficial opacity is

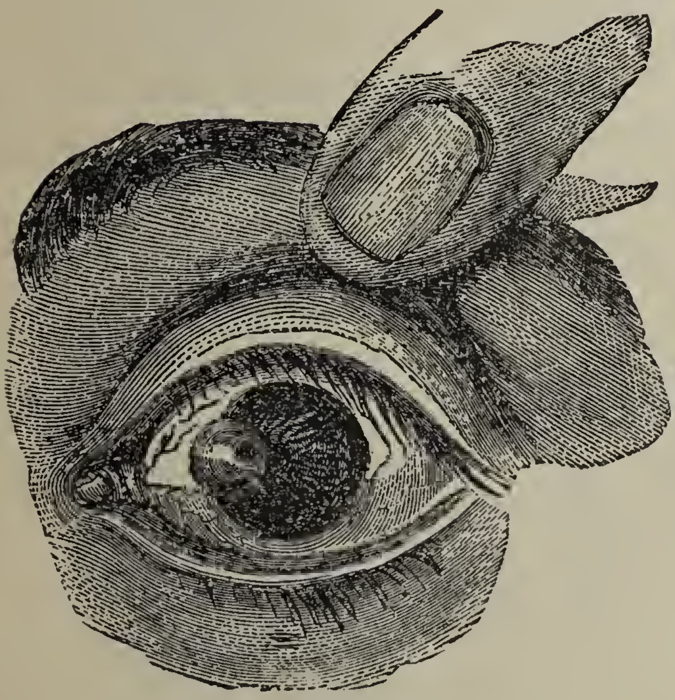


Fig. 39.

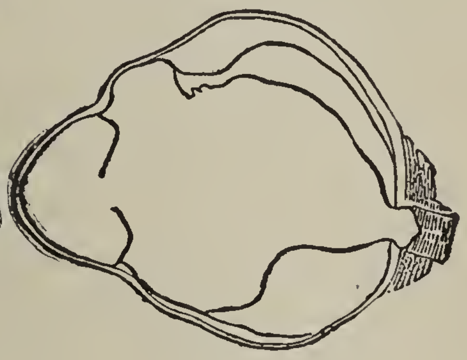


Fig. 40.

called nebula (L. fog), a thick dense one leucoma (Gr. white). A cicatrix *combined* with *prolapse* and *adhesion* of the iris is called leucoma adherans. May see white, chalky deposits, which may be the result of an application of lead lotion where ulceration was present in the corneal tissues. Many opacities disappear spontaneously in the young and robust. As a rule the more recent and *superficial* the opacity the better the

VETERINARY OBSTETRICS

A COMPENDIUM FOR THE USE OF ADVANCED STUDENTS AND PRACTITIONERS.

By W. H. DALYRYMPLE, M.R.C.V.S.

Late principal of the Department of Veterinary Science
in the Louisiana State University and A. & M. College;
late Veterinarian to the Louisiana State Bureau
of Agriculture, and Agricultural Experiment
Stations; Member of the U. S. Veterinary
Medical Associations, etc.

8vo, cloth, with many illustrations, $2.50

ADVANCE NOTICES.

I regard it as a very useful compendium upon the subject.—LEONARD PEARSON, *Dean, Department of Veterinary Medicine, University of Pennsylvania.*

This book will be greatly appreciated by students and practitioners, because it embodies the essentials of Veterinary Obstetrics, yet is brief, terse, up to date and incorporates American experience. The author and publisher are to be congratulated on the completeness of the work, also its style, text, numerous illustrations and general make-up. This book deservedly finds its way into the hands of the majority of Veterinarians and Veterinary students of this country.—S. STEWART, *Secretary United States Veterinary Medical Association.*

LUMBO-PUBIC.

In this, the fœtus is lying on its back, with all the limbs pointing upwards. If called early, it may be possible to push the fœtus into the uterus. Having corded the limbs, by rotation, convert this into a lumbo-sacral. If this is not possible, cord the hind-limbs, and apply traction upwards. As the hocks come to the brim of the pubis, they will likely be caught; then pass in the hand and elevate them (hocks). When the point of the withers reaches the same situation, they will also be fixed, and it may require considerable traction, still upwards, to relieve them.

THIGH AND CROUP.

Or Breach Presentation.

This is looked upon as the most difficult presentation met with in practice, and both parent and fœtus often die before delivery is completed. The hind-limbs are flexed under the body, and the hip of the fœtus is presented. If possible, push the fœtus into the womb, cording the fetlocks, and proceed as in hock presentation.

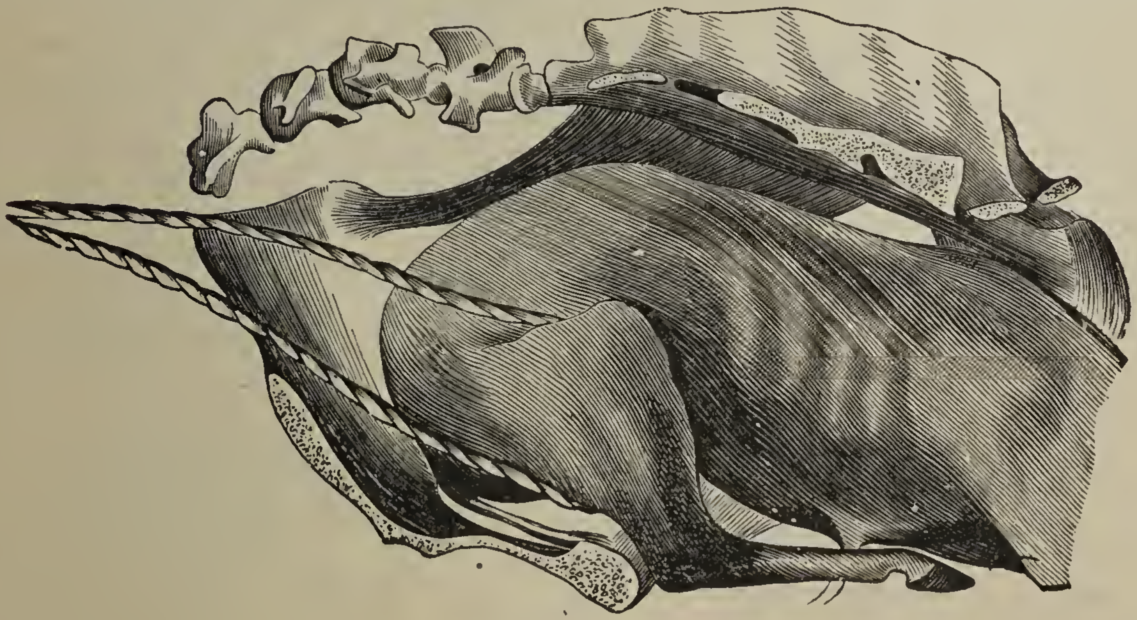


FIG. 29.
THIGH AND CROUP PRESENTATION: THIGH CORDED.

Outlines of...

Veterinary Anatomy

PART III.

The Head and Neck.

By O. CHARNOCK BRADLEY,
Member of the Royal College of Veterinary Surgeons,
Professor of Anatomy in the New Veterinary
College, Edinburgh.

Parts previously issued:
Part I., THE LIMBS. Part II., THE TRUNK.

The author presents the most important facts of Veterinary Anatomy in as condensed a form as possible, consistent with lucidity.

12mo, paper, each, $1.25 vol.; the set complete, $3.50.

◆

Another valuable work for the busy practitioner and student. * * * To the practitioner about to enter the operating arena, it will promptly afford information upon which he may be a little uncertain, and will quickly mirror the field of his operation before him.—*Journal of Comp. Med. and Vet. Archives.*

Large Colored Wall Diagrams

By PROFESSOR SUSSDORF, M.D.
(of Göttingen),

TEXT TRANSLATED BY
Professor W. Owen Williams,
of the New Veterinary College, Edinburgh.

SIZE, 44 INCHES BY 30 INCHES.

1.—HORSE.
2.—MARE.
3.—COW.
4.—OX.
5.—BOAR AND SOW.
6.—DOG AND BITCH.

Showing the position of the viscera in the large cavities of the body.

The above are printed in eight or nine colors, and are the only diagrams of the domesticated animals of sufficient size for lecturing purposes, for which they are already used in all the Agricultural, Technical and Veterinary schools of Germany.

Price, unmounted, = = =	**$1.75**	**each**
" mounted on linen, with roller,	**3.50**	**"**

Some Recently Published

MEDIAN NEUROTOMY

In the Treatment of Chronic Tendinitis and Periostosis of the Fetlock.

By C. PELLERIN,

Late repetitor of Clinic and Surgery to the Alfort Veterinary School. Translated, with Additional Facts Relating to It, by Prof. A. Liautard, M.D., V.M.

8vo, boards,
Illustrated,
$1.00.

The translation bears with it the experience and ripe judgment of Prof. Liautard, whose rank as a surgeon is not surpassed in our country. The work will be gratefully received by those veterinarians who for many years have relied upon counter irritation and the actual cautery for dealing with these lesions, and who have had so many grevious disappointments in this line of treatment. The operation has already found favor in this country.—*Journal of Comparative Medicine and Vet. Archives*

Very full and explicit directions are given of the operation, the regional anatomy is described in a succinct form, and abnormalities likely to occur are specified; and we think that those who desire to become acquainted with an operation that is not uncommonly made use of on the continent, and of which we have published annotations, cannot do better than buy the work.—*The Veterinarian*

A COMPEND OF

Veterinary Materia Medica and Therapeutics

By Dr. A. C. HASSLOCH, V.S.,

Lecturer on Materia Medica and Therapeutics and Professor of Veterinary Dentistry at the New York College of Veterinary Surgeons and School of Comparative Medicine, N.Y.

12mo, cloth, 225 pp., $1.50.

The little volume is neat and convenient in size and form, and printed in clear, bold type. It briefly covers the whole subject of materia medica, going into no details of the matter presented. It will prove a valuable reference book to the student and aid him in his studies and preparation for examination; alike it will find a place on the office table or pharmacy shelf of the busy veterinarian, where its prompt aid will suffice for a time the busy worker when one is in doubt. The arrangement of the various drugs under the chief action they possess makes it more attractive and presentable. The veterinarian has lacked in his field many of these assistants, and so has the student at the end of his college term when reviewing for examinations, and they will find this work a help in time of need.—*Journal of Comp. Med. and Vet. Archives.*

WILLIAM R. JENKINS

announces as in course of publication
the following important works :

A TREATISE ON VETERINARY THERAPEUTICS OF THE DOMESTIC ANIMALS

By Professor P. J. CADIOT and J. ALVARY.
Translated by Professor A. LIAUTARD, M.D., V.S.

PART I. VOL. I. ALMOST READY.

A DICTIONARY OF VETERINARY MEDICINE

By Prof. A. LIAUTARD, M.D., V.S.

FOR CONVENIENCE USE THIS BLANK WHEN ORDERING.

Remittance should be made by Express Money Order, Post Office Money Order, or Registered Letter.

ORDER BLANK.

WILLIAM R. JENKINS,

851 & 853 Sixth Avenue, New York.

Enclosed find............ ....Dollars, for which please send me, prepaid—

....	*Breeding Race Horses by the Figure System.*	Price	$7 50
....	*Kobert's Practical Toxicology.*	"	2 50
....	*Wyman's Diagnosis of Lameness in the Horse.*	"	2 50
....	*The Art of Horse-Shoeing.*	"	1 00
....	*Cadiot's Exercises in Equine Surgery.*	"	2 50
....	*Van Mater's Veterinary Ophthalmology.*	"	3 00
....	*Dalrymple's Veterinary Obstetrics.*	"	2 50
....	*Bradley's Veterinary Anatomy.* 3 vols.	Price per vol.,	1 25
		Complete,	3 50
....	*Pellerin's Median Neurotomy.*	Price	1 00
....	*Hassloch's Veterinary Materia Medica and Therapeutics.*	Price	1 50
....	*Large Colored Wall Diagrams.*	Price, each,	1 75
		Mounted	3 50
....	*Dollar's Handbook of Horse-Shoeing.*	Price	4 75

Address, Name, ...

P. O.,........ ....

County,..........................

State,......................

Tuberculin and Mallein.

May be obtained from the Bacteriologic Laboratory of

Jno. T. Milliken & Co., St. Louis, Mo.,

at the following prices:

Old Tuberculin and Mallein.

A. Undiluted 50% Glycerine. In vials 10 c.c. each, price $3.00 per vial.

B. Diluted—

(Prepared especially for the veterinary practice, ready for injection.)

TUBERCULIN (Diluted.)		MALLEIN (Diluted.)	
One injection	$0.25	One injection	$0.30
Two injections in one bottle	.40	Two injections in one bottle	.50
Four " " " "	.80	Four " " " "	1.50
Ten " " " "	1.50	Ten " " " "	2.50
One hundred injections in ten c.c. bottles	15.00	One hundred injections in ten c.c. bottles	20.00

SINGLE DOSES ARE PUT UP IN HERMETICALLY SEALED BOTTLES.

"SURE STEP"

RUBBER CUSHION TREAD

HORSE SHOE

PATD OCT. 1896.
FREDERICK W. HAHN.
NEW YORK.

Absolutely Perfect in
Shape, Size, Weight and Durability.

Positively Preventing Horses from Slipping or Stumbling.

Adopted and in use by leading Fire Departments, Livery and Private Stables. Consists of Stub Skeleton Shoe, provided with **RUBBER CUSHION TREAD.** Adapted to take a firm hold upon the ground. Price per set, complete, $2.00. Send for circulars. Agents wanted.

F. W. HAHN, 356 Grand St., New York.

University of the State of New York.

American Veterinary College

139 & 141 WEST 54th STREET, NEW YORK.

Incorporated and Organized 1875 under the General Laws of the State of New York. Reincorporated and Reorganized 1888 by Special Act of the Legislature of the State of New York.

COLLEGIATE DEPARTMENT.

GOVERNING FACULTY.

ALEXANDER F. LIAUTARD, M. D., V. M.,
Professor of Anatomy, Operative Surgery, Veterinary Jurisprudence and Sanitary Medicine.

JAMES L. ROBERTSON, M. D., D. V. S.,
Professor of Theory and Practice and Clinical Medicine.

CHARLES A. DOREMUS, M. D., Ph. D.,
Emeritus Professor of Chemistry.

ROSCOE R. BELL, D. V. S.,
Professor of Materia Medica, Therapeutics and Hygiene.

JOHN ELMER RYDER, D. V. S.,
Professor of Obstetrics and Cattle Pathology.

WILLIAM J. COATES, M. D., D. V. S.,
Professor of Operative Surgery and Physical Diagnosis, and Clinical Lecturer to the American Veterinary Hospital.

L. H. FRIEDBURG, Ph. D.,
Professor of Chemistry and Toxicology.

J. B. STEIN, M. D.,
Professor of Physiology.

ADJUNCT FACULTY.

J. A. LEIGHTON, D. V. S.,
Professor of Horse Shoeing and Diseases of the Feet.

Professor of Surgical Pathology and Practical Microscopy.

H. H. RUSBY, M. D.,
Professor of Botany.

Lecturer on Anatomy.

J. HUELSEN, JR. D. V. S.,
Professor of Sanitary Medicine,

H. D. HANSON, D. V. S.,
Associate Professor of Theory and Practice and Clinical Medicine.

P. GIBIER, M. D.,
Director of the Biological Laboratory.

W. V. BIESER, D. V. S.,
Preparator of Anatomy and Curator of the Museum.

G. G. VAN MATER, M. D., D. V. S.,
Professor of Ophthalmology.

GEORGE C. BECKET, D. V. S., M. R. C. V. S.,
Lecturer on Bacteriology.

HERBERT NEHER, D. V. S.,
Professor of External Form of the Horse.

AMERICAN VETERINARY HOSPITAL.—Practical Dept.

MEDICAL STAFF.

A. LIAUTARD, M. D., V. M.,
Principal and Medical Director,

W. J. COATES, M. D., D. V. S.,
Chief Surgeon.

C. E. CLAYTON, D. V. S.,
Assistant Surgeon.

H. W. BELLMAN, JR., D. V. S.
House Surgeon.

R. TROWMBLY,
Assistant House Surgeon.

J. E. RYDER, D. V. S.,

H. D. HANSON, D. V. S.,
Visiting and Clinical Veterinarians.

HERBERT NEHER, D. V. S.

This School enters upon its twenty-third year, and has a graded course of instruction to extend over three years. The Sessions open in the first week of October in each year and close toward the end of March. For the new catalogue and further information, apply to

A. LIAUTARD, M. D., V. M., *Dean.*

CoLibrì
COVER SYSTEM ®
Made in Italy
05-14 STD
8 032919 991409
www.colibrisystem.com

UNIVERSITY OF ILLINOIS-URBANA
619.05AV C002
JOURNAL.$NY
21 1897-98 AP-MR
3 0112 005877037